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The Clouded Crystal Ball, 1797

Not only do I not believe in the stability of the American Government, but the peculiar organizations in English America do not arouse confidence in me. The cities, for example, inspired by a miserable jealousy, cannot agree on any place where the Congress shall sit; no one will yield the honor to another. Consequently, it has been decided to build a new city, which shall be the seat of government. The most desirable place has been chosen on the banks of a river; it has been decided to call the city *Washington*; the locations of all the public buildings has been begun and the plan of the *Queen City* has been circulated in all Europe. There is nothing, of course, in all this that surpasses human ability; a city can be built well enough; and yet there is too much deliberation about this, too much conscious planning; and you can wager a thousand to one that the city will never be built, that it will never be called *Washington,* and that Congress will never sit there.

Count Joseph de Maistre, "Can the French Republic Last?" 1797. Quoted in *The Independent,* LVI (January-June 1904), 809 f.

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Our Contributors

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John A. Hannah has been President of Michigan State University since 1941. A graduate of the institution, he has served it as a member of the agricultural extension staff and as secretary of its governing board. His many services to education include the presidency of the American Association of Land-Grant Colleges and State Universities, during 1949 and 1950, and the chairmanship of its executive committee for the two years following. He has also served on committees of the American Council on Education, on the Board of Trustees of the Institute of International Education, and on the Board of Directors of the Midwestern Universities Research Association. He was on leave from Michigan State University in 1953-54 to serve as Assistant Secretary of Defense (Manpower and Personnel). Currently he is Chairman of the Federal Commission on Civil Rights, and Chairman of the American Section of the Permanent Joint Board on Defense, Canada-U.S. His record of public service includes a term on the International Development Advisory Board which formulated policies for the Point Four program of technical and economic aid to the underdeveloped areas of the world. The present article is developed from his address before the Ninth International Conference of the Green Meadow Foundation at Ruschlikon, Switzerland.

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(Continued, p. 80)

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WILLIAM G. CAPLES

Automation in Theory and Practice

The handling of technological change in the present phase of the industrial revolution

Although the word "automation" is only twelve years old, it has managed to acquire almost as many different definitions as "truth" or "justice." This diversity stems in part from the genuine differences of opinion on what automation is. But perhaps the most important factor contributing to the resulting confusion is that automation (both the process and the word) has become a political football. It serves as a rallying cry for those with a definite point of view to sell. The definition is cut to fit a predetermined conclusion. Even in less offensive instances, automation may be defined only in terms of those characteristics which interest the author. This may violate neither the rules of research nor the requirements of honesty, but it is nonetheless an unfortunate practice. Even without malice, it increases the difficulties of achieving a common understanding, an understanding which will permit use of the concept without repeated redefinition, and which will facilitate comparison of research results.

To provide a basis for such understanding, let us, at least for the purposes of this paper,[1] agree upon the definition developed for the First International Automation Exposition held in November 1954. Automation was there defined as *the substitution of mechanical, hydraulic, pneumatic, electrical and electronic devices for human organs of observation, decision and effort, so as to increase productivity, control quality, and reduce cost.*[2]

I think this is a good definition. It highlights and emphasizes the fact that automation is an aspect, perhaps a new dimension, of technological change: the performance of control functions by machines. But it also makes explicit the idea that automation is essentially an extension of

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mechanization — the substitution of mechanical and electrical energy for human energy. Before a process can be automated or self-controlled to some significant degree it must be mechanized.

In this frame of reference, automation is only one technique in the process of technological change, and it is evident that technological change has been the main characteristic of the development of the industrial society of the West. For that matter, even automation *as such* is not entirely new.

Well-known examples of early automation include a water device the Romans used for automatic control of temple doors, an automatic direction finder used by the Chinese for their chariots in the eighth century, a successful mechanical loom built in France in the middle of the eighteenth century, and a fully automatic grist mill designed by Oliver Evans in 1784 in which grain was processed into flour without human help.

THE FEAR OF CHANGE

If automation is not new, why the current interest in and fear of the process? Part of the answer (but, I believe, only a small part) lies in a concern that the tempo of change has increased faster than we can cope with it. More importantly, I think, the answer lies in the fact that we have been and are only just emerging from a slow-down in national economic activity, a slow-down which has caused a rise in unemployment and created widespread fear of further recession. Alarm has arisen over the possibility that unemployment might increase. There has been considerable casting about for explanations and, lacking them, for scapegoats. Automation served both purposes.

Automation, or the broader phenomenon of technological change, has been particularly appropriated for these roles by labor unions. The reasons are not hard to find. One of the most tenaciously held trade union beliefs is that there is only a certain amount of work to be done, virtually regardless of cost, price, or demand. Therefore, if machines are substituted for men, the number of available jobs will decrease. Since automation is commonly reputed to decrease the number of jobs available, it becomes equated in the popular image with layoffs. It becomes synonymous in the union mind and the union press—and frequently in the popular press—with unemployment; it becomes a scare word. In June 1939, the Gallup Poll asked people on relief, "What do you blame for the present unemployment in this country?" Increasing use of machinery was cited more frequently than any other possible cause. In the two decades since then, this stereotype has had its ups and downs, but it has not died. Today it has probably returned to the first rank of "reasons" for unemployment.

Abatement of Fear

Fear of technological change is, of course, not a development of the Great Depression. Over the centuries it has risen—often in a virulent form—and subsided as each nation's economic activity ebbed and flowed. I think there may be some tendency towards a gradual abatement of this fear as more and more is understood about the nature of capitalism as an economic

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system. John L. Lewis, former head of the United Mine Workers of America, actually encouraged the introduction of labor-saving machinery into the coal mines, thereby raising worker productivity and halting the loss of coal markets. And in the Thirties northern hosiery workers, faced with the imminent collapse of their employers' businesses and consequently of their own jobs as a result of the fierce competition of the southern mills, accepted drastic reductions in wages on the condition that their employers modernize their equipment.

But these attitudes are the exception. Fear of the effects of technological change, particularly in its contemporary dimension of automation, is more typical. Only a few years ago, for example, at an Automation Conference held under the auspices of the Industrial Union Department of the AFL-CIO, a distinguished leader of the United Steelworkers of America, when asked which definition of automation he liked best, came up with this one: "Automation is the displacing of any worker with the use of machinery."[3]

Unemployment

How much truth is there in the fear that automation causes unemployment? In the short run this fear may have some validity, although substantially less than trade unionists believe. What they tend to overlook is the continuing effect of other factors on unemployment. If, for example, production costs in a plant or company are not reduced by the introduction of automation, the increasing competition from similar and competing products as well as from within the country and from imports may well operate to reduce the demand for that given company's goods with a consequent reduction in employment. Also, the effects will differ greatly from company to company.

THE LONG-RUN PICTURE

In the long run, however, I believe not only that it is demonstrably untrue that automation causes unemployment, but that the reverse is true. That is, that technological change, including automation, tends to increase the number of jobs available.

I believe that the short-run effects are best illustrated by individual cases; here displacement of particular workers may be noted. Long-run effects, however, tend to average out individual cases, and a total-economy picture is more useful. I therefore propose first to examine some aspects of technological change in the long run, based on national employment and investment data, and then to illustrate short-run effects by case histories from Inland Steel.

Industrialization and Unemployment

Let us skip the theoretical arguments advanced by economists to support the proposition that technological improvements, either by reducing the cost of goods or by increasing the purchasing power of one or more factors of production, increase demand for goods and thereby create new jobs. These arguments are well known and may be found in many economics texts.[4] Adequate proof of the validity of these arguments may be found in the historic fact that the demand for labor has, in the long run, kept pace with the increase in the supply of labor.

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One aspect of the relationship between the levels of technology and employment is to be seen in the unemployment rates of agricultural versus industrialized countries. From the admittedly inadequate statistics gathered by the International Labor Office in Geneva, it may be concluded that on the whole unemployment is and has been less of a problem in highly industrialized countries where there is a high rate of technological change than in static agricultural economies. For example, in North America the average yearly unemployment rate of 4.5 percent for the United States for the years 1952-58 compares favorably with the Canadian average of 9.3 percent for the same period. And in 1957-58, the only years for which information was available, the average unemployment rate for predominantly agricultural Cuba was more than double the 5.6 percent average for the United States.

Turning to Europe, we see that the United Kingdom had an average unemployment rate of 1.5 percent, West Germany 5.6 percent, and the Netherlands 2 percent. But agricultural Ireland had an average unemployment rate of 8.9 percent, agricultural Italy 9.6 percent and agricultural Denmark 10 percent. In Asia, industrialized Japan has had an average unemployment rate of 1.5 percent, while agricultural India is well known for its large-scale chronic unemployment, although exact percentages have not been reported.

Now I do not mean at all to imply that there is any simple cause and effect relationship between unemployment and under-industrialization. There are many other factors involved in the creation of unemployment, some of which have effects opposite to that of industrialization. I wish only to indicate that the belief held by many workers that increasing unemployment goes hand in hand with increasing industrialization is quite wide of the mark.

Unemployment and Technology

It used to be that during periods of business depression the effects of unemployment—and possibly the amounts of unemployment—were greater in industrial countries than in agricultural countries.[5] But neither the amount of cyclical unemployment nor its effects can be ascribed to automation. In fact, investment in labor-saving technology tends to be correlated with high business activity, not depression. As Professor James Bright of Harvard, in one of the comprehensive studies of automation made so far, points out, the underlying impetus behind much automation installation is the need for increased capacity stemming from an upturn in the cycle: "Industry, it seems, tends to expand in anticipation of increased business rather than when demand is falling."[6]

If changes in the unemployment rate could be compared with changes in the rate of automation, the relationship between the two would be somewhat clarified. Unfortunately, statistics showing the net new investment in labor-saving technology and the changes in demand for labor are not available, and both variables are very difficult to measure. However, one can approximate this relationship by comparing unemployment with investment in producers' durable equipment. If we make the not unreasonable assump-

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tion that investment in producers' durables and investment in technological change tend to have similar effects on the economy, and particularly on unemployment, the relationship and pattern that emerge are of considerable interest.

The accompanying graph shows total investment in producers' durable equipment per thousand people, from 1929 through 1958, and unemployment per thousand for the same time period. During eleven of the twenty-nine years between 1929 and 1958 capital investment in producers' durable equipment *declined* from the level of the previous year. *In every one of those eleven years of reduced investment—except for the three that were war years—unemployment rose.* Now let us look at the years of increasing investment in producers' durable equipment: *in fifteen out of the eighteen years that such expenditures increased over the average of the previous year, unemployment fell.* The correlation between these two series is—.73, indicating the strong tendency for them to go in opposite directions.

This negative correlation between unemployment and investment in producers' durable equipment clearly suggests that technological breakthroughs, as reflected by investment in producers' durable goods, frequently assist the economy to pull out of a recession. Harry A. Millis, the noted labor economist, believed strongly that technological advances were likely to reduce the displacement of labor in the United States rather than to increase it. He pointed out:

> Technological changes help to sustain the demand for capital goods, and if . . . we are entering upon a period when capital equipment cannot be expanded as rapidly as in the past, anything sustaining the demand for equipment may be a tremendous help in adjusting ourselves to a slower rate of growth, and to a situation where more persons will be employed in the consumers'-goods industries and fewer in the capital-goods industries.[8]

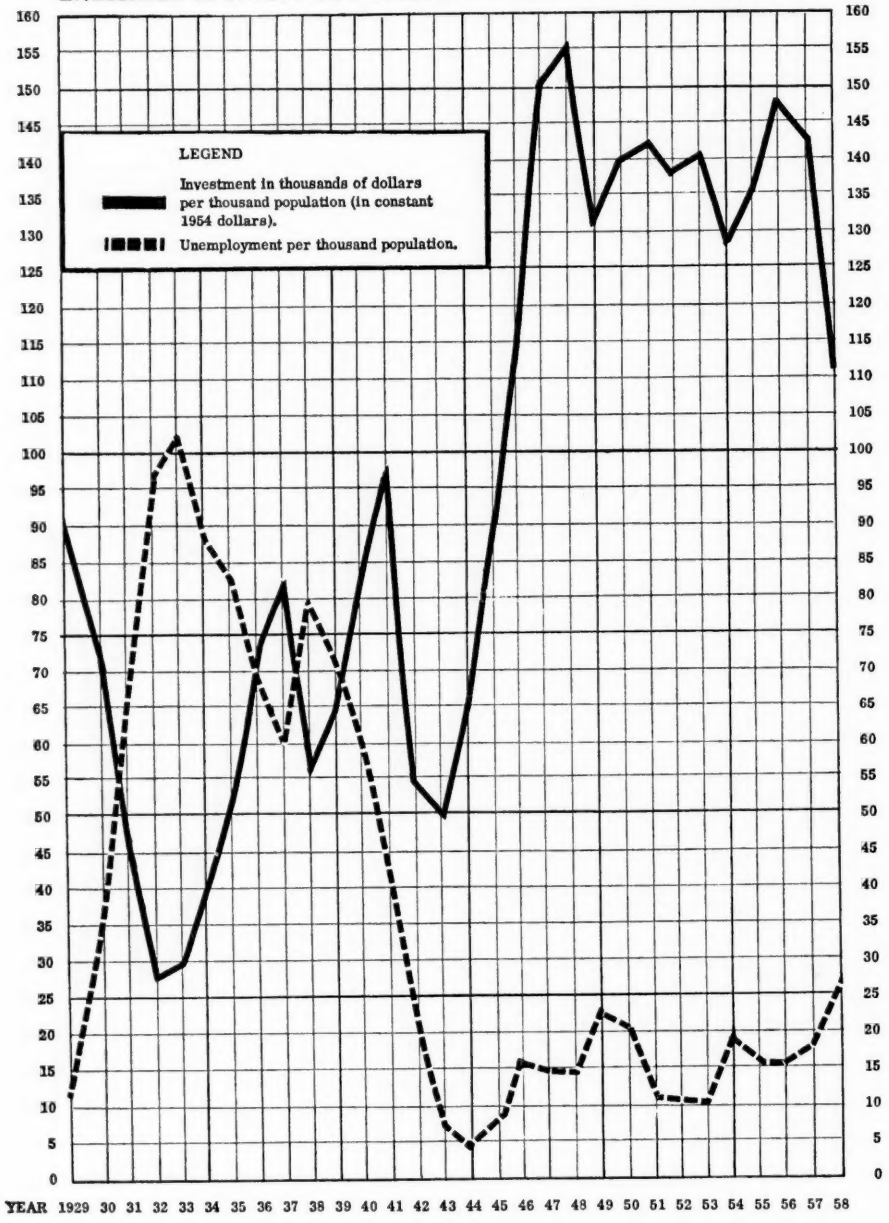
Written in 1938, this is an accurate prophecy of the actual situation today.

The same countries which have industrialized, which have introduced labor-saving machinery, are also the ones which have developed new industries and products, thus stimulating a demand for labor. The industrial climate and the research effort that lead to the development of labor-saving machinery and devices also lead to the development of new products and new industries. As economists George Baldwin and George Shultz put it, "It is much easier to identify jobs that are being lost to technological change than those it is creating."[9] But it is evident that such changes do create new jobs.

THE INLAND STEEL EXPERIENCE

Even if the long range overall effects of automation on employment are all positive, the same may not be true of the short-run effects. There have been and there will be employment changes due to automation: these include, in the short run, both increased opportunities, promotions, and higher wages, and dislocations, downgrading and disemployment. Obviously the changes will vary greatly according to the circumstances in each case; there cannot be a single clear-cut pattern for the transition from less-automated to more-automated production. Since the short-run effects will probably be encountered by a large number of companies, however, case studies of the

INVESTMENT IN PRODUCERS' DURABLES IN RELATION TO UNEMPLOYMENT



SOURCE: Unemployment - U. S. Dept. of Commerce, Bureau of the Census
Investment - U. S. Dept. of Commerce, Office of Business Economics

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experiences of firms in many industries should prove of value. In the hope that the experiences and experiments at Inland Steel may be useful to firms that have yet to face this problem, I should like to discuss the changes in production methods in terms of specific experience in three departments—a sheet mill, rail accessories and the galvanizing lines. The last is virtually a textbook case of automation—one process discontinued and a more efficient and faster method for producing the same product of better quality substituted. The shutdown of the sheet mill and rail accessories, however, were from different causes.

> [The hand sheet mill] was on its way out when the continuous hot strip mill was introduced in the 1930s. We had maintained a few of the hand mills to process electrical steel products, but this process also was superseded by new methods, and in 1954 it no longer was practical to operate the hand fed sheet mill.[10]

The termination of manufacture of rail was an economic matter:

> Simply stated, the rail business had become relatively unprofitable, and good business practices demanded that the steel being rolled into rails be made into other more profitable products. Since rails and rail accessories are sold together we had to discontinue production [of rail accessories in 1958.][11]

Since there was no substitution of process in either instance when these mills were discontinued there were added difficulties in placing the employees. There was no logical place for them to go.

Communicating the Problem

No company-issued information can hope to get ahead of the grapevine, but we tried not to be too far behind it, to reduce the length of time that false rumors could circulate unchallenged. We communicated with four different groups:

- *The employees affected,* to inform them of the proposed shutdown and of their rights under the contract, and to tell them what additional steps the company proposed to take to keep them on the payroll.
- *The plant's supervisory personnel,* to inform them of the discontinuance of the mill involved and to enlist their cooperation in holding jobs vacant for the disemployed workers.
- *The union officers,* to inform them of the imminent shutdown and the steps the company proposed to take.
- *The public,* in the immediate area of the mill involved.

The sequence of communications in the rail mill case illustrates this process:

First, the superintendent of the department explained thoroughly to his foremen the full story behind the decision, giving each foreman the authority and the information to review with his crew the economics of the problem in much greater detail than is usually done.

The first public announcement was made on August 21, 1958, when the president of the company told our customers by letter that we were going out of the rail business.

On August 22 we issued press releases to the newspapers, and announcements were placed on the rail mill department bulletin boards.

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On August 27 registered letters were sent to employees telling them of the discontinuance of production and of their rights under the contract to transfers elsewhere in the plant.

On September 5 the hiring of new people for plant employment was temporarily discontinued for all but a few specialized occupations, so that rail mill people could be placed in new jobs.

On September 8 departments with job openings began looking over personnel record folders and interviewing.

On September 13, 1958 the rail mill was shut down for good.

We believe that this early and extensive communication program was very helpful in allaying employee fears and in preventing bitterness and bad feeling. We also think that its success was due to the fact that we followed up our words with prompt action; all but one of the employees affected were placed on other jobs. The one exception chose severance pay and early retirement.

As a general principle I would venture to guess that communications to employees about technological shutdown of their work area, if not followed by action placing all, or the large majority, of them on other jobs, may turn out to do more harm than good. Information alone is not enough.

Transferring Displaced Workers

We were very successful in placing displaced workers on other jobs—and it was not due to luck. In the case of the sheet mill and rail mill shutdowns, where there was no neat and obvious place to transfer the displaced workers, we spent thousands of supervisory man-hours lining up transfer possibilities, interviewing workers to determine their preferences and their skills, discussing with supervisors throughout the plant the need for holding vacancies for the displaced workers, following up the transfers to see how they were working out, doing before-and-after wage surveys—and answering irate letters from disgruntled wives asking us why we were so cold and heartless as to do nothing about the displaced workers. Even in the case of the galvanizing lines, where all employees who wanted to transfer could easily do so, discussions were scheduled with the foremen and the workers to ease and simplify the actual transfer as much as possible.

Our placement score in the rail mill was indicated above: only one retirement, all other displaced employees transferred to other jobs.

Of the 96 men affected on the galvanizing lines change, 75 were placed in jobs on the new line which directly replaced the old process, while 21 were transferred to other occupations within the department.

Of the 145 employees affected in the sheet mill shutdown, 125 were placed on other jobs; 12 quit or were terminated, with severance allowances; five retired and one was put on a disability pension; and two physcially disabled employees were also eventually pensioned.

Getting displaced workers other jobs is, of course, the basic requirement of a successful transfer program, but it is by no means the only one. We were also concerned with moving employees to jobs where their take-home pay would be cut as little as possible. We were concerned with transferring them as rapidly as possible. We attempted as far as possible to move

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them to departments where their highest skills could be utilized. And finally we tried to put them in situations where they would feel satisfied and happy with the change. There follows an analysis of the results of our placement efforts.

Wages

Galvanizing Lines. In 1951 a new continuous galvanizing line was built, and production in the old process, the pot operations, was reduced by half. When the second galvanizing line was built in 1954 all pot production was discontinued. Just prior to the 1951 reduction in pot production, the weighted average wage per hour for production employees was $1.43. Using the same (1950) base rates, the average wage per hour for the continuous line operation was $1.56. This increase resulted from the higher skill requirements of the new operation; the average job class rose, and consequently the average wage rate was increased. In actual fact, wages have increased much more than 9 percent, since base rates have increased substantially since 1950. Currently (spring 1960), workers on the new galvanizing operation have an average wage 73 percent higher than that received in 1950.

Sheet Mill. The experience in the sheet mill might appear at first glance to be less satisfactory than in the galvanizing lines. Average weekly earnings in the sheet mill for the first three quarters of 1954 were $81.25, including incentive pay, for the transferred employees. It was estimated that these same employees on their new assignments would receive average weekly earnings of approximately $70.00, exclusive of incentive pay (most of these employees had no incentive pay available on their new assignments). Shortly after the transfer, 80 employees were receiving lower hourly average earnings than they had in the sheet mill, while 41 were receiving earnings equal to or slightly higher than their sheet mill earnings. The employees who experienced the greatest reduction were those who had been on top-rated specialized jobs in the discontinued mill.

But within a very short time there was a substantial improvement in this picture. By the middle of 1955, the average weekly earnings of the transferred sheet mill workers had risen to $85.50. The number of men receiving less than their previous weekly sheet mill earnings had dropped to 51, while those receiving more than their previous earnings had risen to 62.

By May 1956 still further improvement in job status and earnings had taken place. Forty percent of the transferred workers had had one or more promotions; 55 percent had remained on their assigned jobs, while five percent had been demoted. Generally, employees with fewer years of service advanced more rapidly than long-term service workers. It should be noted, however, that the shorter service workers had generally held higher job classifications in the sheet mill than the longer service workers. But, relative to their average job class in the sheet mill, employees with twenty-five years or more of service did, in fact, experience the largest drop in average job class and in earnings.

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The average hourly earnings do not, however, give the entire picture. The transferred sheet mill employees are now generally in jobs offering steadier employment than the sheet mill did during its last year or so of operation. The sheet mill had been on intermittant production for some time prior to its close; weekly take-home pay had, consequently, suffered even though hourly rates were high.

The sheet mill employees themselves recognized that their transfer represented, on the whole, an improvement in their status. A survey of all former sheet mill employees was made in April, 1956 to determine how they felt about their present job status in relation to their work in the sheet mill. Replies were obtained from 121 of the 124 employees who had been transferred. Sixteen percent reported that they were "highly satisfied" with their present job status; 72 percent were "satisfied"; 11 percent were "dissatisfied"; and only one percent were "highly dissatisfied." Ten of the 14 employees composing the "dissatisfied" or "highly dissatisfied" group had 25 years or more of service (in all, 50 employees had 25 years or more of service). Under 25 years, however, there was no significant relationship between degree of satisfaction and length of service.

Re-training

It has been assumed by some that automation would necessitate substantial amounts of re-training in order to fit displaced production workers into new jobs. The actual experience of Inland Steel and other companies has demonstrated that this is not always the case. Charles Walker, in his extensive case study of automation in the Lorain Works of the National Tube Division of the U. S. Steel Company, found that while some re-training was necessary, it needed to be neither extensive nor intensive.[12] Our own experience in the substitution of one galvanizing process for another was very similar. Two weeks after the new galvanizing line was started, production was at virtually 100 percent of capacity.

While we do not view this experience as the inevitable pattern in future changes, we have found, so far, that a more formidable problem in re-training workers is the inadequacy of their basic education rather than their work skills. For example, in setting up qualifications for jobs in the new galvanizing processes, the ability to speak, read and write English and do simple arithmetical calculations became a requirement for the first time. This requirement was imposed by the fact that the new process puts the men at considerable physical distances from each other, whereas formerly the men worked within conversational range. Workers unable to understand the foreman's orders could get them interpreted by fellow workers. Today, all communication within the galvanizing department is either by intercom or by written memorandum. Consequently, twenty percent of the men employed in the old galvanizing operation were ineligible for jobs on the new process: they could not meet these new qualifications.

Production workers are not the only employees needing further general education, however. White collar and management personnel also need additional knowledge and insight to enable

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them to cope with the increasingly complex technology of steelmaking. It might be of interest to mention in passing the scope of the educational and training effort in a modern company. The classroom is an ever more important part of the factory.

For example, for twelve years we have conducted, at the Calumet Extension Center of Purdue University, a technical education program open to all employees of the steel mill at the Indiana Harbor Works. Three separate curricula are offered: Electrical, Mechanical and Steelmaking. Most of the classes are taught by university instructors. More than five hundred men have graduated from this two-year program, the first university-industry cooperative education program of this nature in our plant area.

This is only one such effort, however. During 1959, for instance, 4,329 men were given individualized systematic on-the-job training at the Indiana Harbor Works. Many other operations of the company have also adopted the practice of offering organized continuing in-plant training instead of the haphazard instruction that formerly prevailed. At the Indiana Harbor Works in 1959, another 9,284 men participated in programs of a group nature, either on the company premises or in outside institutions, that ranged from English for Spanish-speaking personnel to the Advanced Management Program at Harvard University.

In all, almost half of the total force at the Indiana Harbor Works participated in company-sponsored or company-conducted education and training in one form or another. This effort is intended, to a significant extent, to help employees prepare themselves to adapt to technological changes and to the increasing complexity of new installations.

Management Personnel

Although it is a commonplace that automation brings about increases in the numbers of white collar and management personnel, it is frequently surprising to discover how large this increase really is. The case of the galvanizing lines is illuminating on this point. In this department the number of white collar workers and supervisors was increased by almost eighty percent. Almost half this increase was in the ranks of production and maintenance foremen; most of the rest of the increase was in clerical positions. Not only did the numbers of clerical workers and supervisors increase, however. The ratio of these employees to production workers increased even more dramatically. In 1950, the ratio of production workers to white collar workers (including supervisors) in the old galvanizing operation was over 4 to 1; today, in the automated mill, it is less than 2 to 1.

A PLANNED FUTURE

No one has yet made reliable predictions of the probable extent and impact of future technological change. We do know there will be more automation — although we don't know how much. We do know there will be difficulties associated with its introduction, difficulties of placement, of income and status maintenance, of geographical transfer, of re-education — although we don't know how much. Even within these nebulous limits, however, significant planning can be done. (It should be noted that in the

experience of Inland Steel's Indiana Harbor Works over the past decade, only 357 employees have been displaced by whole-process changes, while the production and maintenance workforce has grown from 14,600 to 17,300. Less than two percent of the workforce has been affected, and of these almost all below retirement age have been successfully absorbed into jobs as good as, or better than, the ones from which they were displaced.)

Education

I would put first the desirability of more and better education — for our school children and for the people currently employed. Workers in all categories will need greater effectiveness with the tools of communication and analysis. They will also need broader knowledge and broader understanding.

Seniority

Second, we must reconsider many areas in the union-management relationship that may appear to be comfortably settled. One such area is seniority. Rigid and narrow seniority rights maximize the difficulties of transferring displaced workers within a company. How are the rights of currently employed workers and displaced workers to be reconciled?

Wage Revision

Third, an optimum solution of displacement problems probably requires a new approach to revision of wage systems in newly automated areas. It is an understandable and natural tendency for unions to try to establish new rates which will enable workers to continue to earn as much — or more — on the new jobs as they received on the old. Similarly understandable is the desire of management to pay on the basis of the skill or training required to do the job and not on the basis of previous earning levels of the transferred workers.

The solutions will have to vary with the individual circumstances. I should like to suggest that compromises will have to be made, to allow the company adequate time to adjust and revise work loads and work schedules, to correct initial errors, and to train foremen and other supervisors in the most effective control of the new equipment. Unless some flexibility is permitted in this area, a company may not have much incentive to try to transfer displaced workers. It may feel that the end result will be the saddling of a rigid and unrealistic wage schedule on the company.

Union Relationships

The technological changes affecting management functions and worker skills will necessarily affect union relationships. I think it possible that increasing jurisdictional disputes will arise as demarcation lines between jobs grow fuzzy. I do not intend to tell unions what to do. For one thing, I'm not quite sure what to suggest. I do believe, however, that unless jurisdictional disputes over which union controls what job can be held to a minimum, the individual worker will suffer. Management will be loath to attempt relocation for such workers if it thinks it will be caught between battling unions. Unions will have to give a great deal of thought to this aspect of the problem if they hope to forward their members' best interests.

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The Fourth Revolution

The development of our modern industrial order from the rural society that occupied the American scene 150 years ago has been accomplished by three major revolutions, primarily technological in character. The first was the revolution of steam; the second the revolution of electricity; the third the revolution of chemistry. We are probably living on the verge of a fourth, the revolution of atomic energy, and concurrently the pace of technological change, as reflected in this phase called automation, has been greatly increased. This greatly accelerated rate of change, however, presents us with great challenges and opportunities, and not merely with great problems. We are all deeply concerned with the need for increasing our national product, both to maintain our world position and to improve our standard of living. Properly handled technological change is the key to both these goals, as it has been the means for reaching the levels we have already attained.

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1. The author wishes to acknowledge with gratitude the research assistance of Miriam K. Ringo.

2. As reported in *The New York Times*, November 28, 1954, Section III, p. 7.

3. Elmer J. Malloy, "The Impact of Automation and Technological Change on Wages, Hours of Work and the Economy in General," *Automation and Major Technological Change*, Papers presented at a Conference held under the auspices of the Industrial Union Department, AFL-CIO, April 22, 1958, p. 28.

4. See, for example, Paul H. Douglas and Aaron Director, "Technological Unemployment," *Readings in Labor Economics and Industrial Relations*, edited by Joseph Shester (New York: J. B. Lippincott Company, 1956), pp. 568-81, and Harry A. Milles and Royal E. Montgomery, *Labor's Risks and Social Insurance* (New York: McGraw-Hill Book Company, 1938), pp. 26-39.

5. Distributive mechanisms tend to break down during periods of depression and industrialized countries are, of course, more dependent upon such mechanisms than are agricultural countries. During depressions, unemployed industrial workers found themselves moneyless and without food while the unemployed agricultural laborers were more likely to be able to get food. Today, however, transfer payments maintain minimal incomes for the unemployed, for a period of six months and sometimes longer. In addition, free surplus foods are available to the unemployed without time limit.

6. James R. Bright, *Automation and Management* (Norwood, Massachusetts: The Plimpton Press, 1957), p. 6.

7. Two of the three years when both capital investment and unemployment rose—1944 to 1946—were World War II years. From 1932 to 1933, investment in producers' durable goods increased very slightly; during this year unemployment also rose. Since statistics on investment in producers' durable equipment are based on amounts actually spent rather than on forecasts of spending, the effects on employment appear almost immediately. It was therefore felt that the most accurate comparison of expenditures on producers' durables with employment would be with that of the same year rather than with employment for the following year.

8. Harry A. Millis and Royal E. Montgomery, *Labor's Progress and Problems* (New York: McGraw-Hill Book Company, 1938), p. 512.

9. George B. Baldwin and George P. Shultz, "Automation: A New Dimension to Old Problems," *Proceedings of Seventh Annual Meeting of Industrial Relations Research Association*, Detroit, 1954, p. 122.

10. Francis M. Rich, "Technological Change in Steel," *Inland News*, July, 1960, p. 11.

11. Ibid.

12. Charles R. Walker, *Toward The Automatic Factory* (New Haven: Yale University Press, 1957).

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BRAJ KUMAR NEHRU

The Economic Challenge in India

The survival of democracy in the world, and the significance of India's example to the newly independent countries

It is not only my Indian nationalism that leads me to the conclusion that the form which world society will take in the future will be influenced very powerfully by the manner in which Indian society develops. But it is clear to me that that conclusion must follow through the application of any objective tests of judgment. At about the beginning of the first World War the world seemed to have been in an equilibrium which, though it was manifestly unjust, appeared so stable that any basic change in it seemed almost impossible. Europe and the United Kingdom dominated the world; the United States seemed happy to develop itself in its own isolation and the rest of the world was composed of second and third class citizens whose function, it appeared, was for all time to admire the ways of life and the achievements of the European with little hope of ever enjoying either his liberty or his standard of material welfare.

In the short space between the beginning of the first World War and the end of the second, the world picture has changed so dramatically as to be almost unrecognizable. For one thing, the moral and psychological dominance of Europe had been destroyed; people who managed their affairs so incredibly badly that they had to seek a solution by plunging the world twice in a quarter of a century into holocausts of mass murder could not have been quite as efficient as they had pretended nor quite as moral as those outside the pale had been led to believe. The material power of Europe was also shattered; as a consequence it could no longer maintain its hold, against the growing strength of nationalism, over the enormous territories over which it ruled and the bene-

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fits of which rule it enjoyed. There had arisen also another power believing in a totally different religion and a set of values to which the world had hitherto been unaccustomed. That power had developed a strength which placed it among the foremost nations of the world and soon it converted, by its example, the most populous nation on earth to follow in its wake.

THE GROWTH OF INDEPENDENCE

The change of conditions brought about by two world wars, the growth of the forces of nationalism in the colonial territories of the European powers, the political, moral and, on occasion, industrial strength which the colonies had, in the interval, developed, have led since the end of the second World War to no less than twenty-four nations regaining their political independence from foreign rule. The process still continues and there is little doubt that a few years hence the few remaining colonies in Asia and the countries of Africa will become independent sovereign states. The importance of this new situation cannot be exaggerated, for the countries of Asia and Africa contain by far the largest proportion of the inhabitants of this globe. And in a world which has shrunk so greatly through rapid means of communication and which has become so inter-dependent politically and economically, what happens to this vast sea of humanity cannot possibly fail to affect the ways of life of all the inhabitants of the globe, no matter how far removed from the scene of action they may at this particular moment consider themselves to be.

The importance of India in influencing the future line of development of Asia and Africa is dependent on a number of factors. For one thing, India is by far the largest country among the nations which have newly found their independence. For another, India had been for so long in the vanguard of countries fighting for their freedom that it began to have, and it still has, a profound psychological effect on countries which find themselves politically or economically in the same circumstances. Thirdly, India has become a symbol of development through democracy just as China is a symbol of development through totalitarianism. And though we do not claim to be engaged in any economic race with any part of the world, it is patent that a large number of countries are watching with considerable interest developments in these two giants of Asia in order to see which one has the better solution to their problems. Finally, India is so well placed for the maintenance of democracy that if even we fail to make a success of it, there is little likelihood that the others will continue to have faith and courage in following a path which for them is even more difficult.

The Basic Need

The countries of Asia and Africa which have regained their independence differ in many respects from each other and have an infinity of diverse problems. But there is one basic factor in common among them and that is that their economies are under-developed, which is another way of saying that their people are poor. Political independence from external authority is the first objective of the people in the under-developed as in the developed world. But once political independence

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has been achieved, the objectives of all societies are not always the same.

There are two other human needs that organized society has to meet — the need for liberty and the need for bread. And in so far as these two needs conflict with each other the one or the other will dominate in inverse proportion to the extent to which it has been satisfied. In the richer societies, such as your own, the need for bread has been fully satisfied and over satisfied; the basic material wants of the people have been met and, indeed, consumption sometimes overflows into luxury and waste. In so far as certain legitimate needs have not been met, it is very simple to meet them through minor changes in the direction of social activity. Under these circumstances, the most powerful need of society is that of maintaining and enlarging the field of human liberty.

In the conditions in which India finds itself along with the rest of the under-developed world, the basic need for bread has not been met. There is not enough food, not enough clothes, not enough houses or hospitals or schools, not enough roads or transport or doctors or nurses or teachers, and not even enough water to drink. In these circumstances, it would not be at all surprising if the people of these countries were to rate the material needs of life higher than the non-material values of human liberty, for freedom of speech and of association, freedom of the press and the right to vote do not have the same meaning to those who do not know where their next meal is coming from nor where they will take their child if it happens to fall ill. If there is a system of society which can get them out of their misery rapidly, it would not be surprising if they were to agree to a deprivation of their human liberties in order to improve their material status fast.

Results at a Price

The danger to democracy in the under-developed world clearly arises from the fact that there is a system which does produce economic results in an under-developed society much faster than the painfully slow and extremely laborious processes of democracy. The price that is required to be paid is heavy: the denial of human freedom and almost total subservience to the state. It also requires that the material wants of one generation, and perhaps more, should be almost completely sacrificed for the benefits of the generations that follow.

THE INDIAN SOLUTION

Judged against this background, what is the Indian answer? As I previously observed, India is better placed for the maintenance of democracy than most of the countries of the under-developed world. This has been borne out by the fact that whereas country after country, in our part of the world, has fallen a prey to dictatorship in one form or another, we can say with great pride that we have maintained ever since independence the highest standards of democratic government that are prevalent anywhere in the world.

In spite of the great material handicap which the poverty of our people imposes on us, we have been able to do this for a variety of reasons. First and foremost, the fact that we are an old and continuous civilization, one of the basic tenets of which has always been never to give priority to ends

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over means, has enabled us to resist shortcuts which might involve the use of questionable means. Secondly, the whole tradition of Indian society has been one in which individual thought and speech are completely free, and though the central government of India till 1947 was always what in terms of political theory could not but be called despotic, social organization at the lower levels has invariably been democratic in the same terms. Yet again, the British connection has left its indelible mark on Indian thought and the values of British liberalism are so strongly entrenched in our national life as to have lost completely their alien origin. Also, the fact that we had to fight for a long period of time for our freedom which was by no means presented to us on a platter as the by-product of events in which we played no part, gave us the ability to work together and to tolerate differences of opinion, which tolerance is the essence of democracy. More concretely, the last twenty-five years of India's struggle for freedom were conducted by the Indian National Congress on a mass basis with every office of authority in the Congress organization (which at times functioned almost as a parallel government) being held through election by popular vote. This valuable training in democracy has stood us in good stead and has enabled us to withstand the onslaught of forces to which many of our neighbours have unfortunately succumbed. Furthermore, we have an administration and an administrative service second to none in the world and this is a factor which plays no small part in the maintenance of the stability of society.

The Defense of Democracy

Under these conditions the challenge to Indian democracy is solely economic. Will we or will we not be able to develop fast enough to be able to satisfy the economic expectations of our people? Will we or will we not be able to demonstrate that to alleviate poverty, hunger and disease it is not necessary for human beings to lose the liberties which democracy guarantees them, and to surrender themselves body and soul to the state? If we can show a progressive increase in the standard of living of the people, if, further, we can show (this is psychologically very important) that this progress is not dependent for ever and ever on the goodwill of foreign governments, then it seems to me that it does not matter that other systems might provide even better results. The attachment to human liberty and dignity in India is strong enough for the people to be satisfied with a slower rate of economic growth than would be possible if these values were sacrificed, but it is very possible that it is not strong enough to withstand the forces generated by a relative stagnation of economic life.

ACCOMPLISHMENTS AND PROSPECTS

Given the absolute determination of the government of India to maintain the democratic structure of Indian society, and given further the categorical imperative of rapid economic growth, without which that structure cannot be maintained, how has the government of India proceeded so far, how successful has it been and what are the auguries for the future? Having rejected the totalitarian method of eco-

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nomic development, the only alternative that was left to us on the basis of historical experience was development through laissez-faire. But historical analogies are not always correct guides for action and we did not fail to remember that most countries developed under laissez-faire in a period in which the organization of society was not democratic. What distinguishes our situation from that of Europe and Japan, where they had their period of rapid economic expansion, is that they had the Industrial Revolution before their political revolution while we are having it afterwards. What distinguishes us from the methods followed in the colonies of Europe, in what is now the United States, in Canada and Australia is that we are not a virgin unpopulated land with a proportion of resources to population many scores of times that which exists in old and densely populated countries. We had, therefore, to strike out on a new path for ourselves, a path that would, on one hand, avoid the dangers of totalitarianism and, on the other, pure laissez-faire's frequent injustices and wasteful use of resources. So we started on what has come to be known as planned economic development and a mixed economy.

The Meaning of Planning

We have completed one five year plan and we are now in the last year of the second. The third five year plan is now being worked out in detail and will commence its term in April 1961. But I should, I think, before describing the results of our developmental efforts, explain the nature of planning in India. The term "five year plan" tends in the United States to conjure up a picture of totalitarianism, of regimentation, of bureaucracy and of forced labour. It connotes decisions taken by a few people at the top and ruthlessly carried out no matter how circumstances change nor what the cost to individual human beings is.

But planning in democratic India is the very reverse of this picture. What Indian planning signifies is nothing more nor less than a concerted effort on the part of the nation as a whole (both the public sector represented by the government and the private sector represented by private enterprise) to take a view of its needs and resources over a number of years so as to arrive at a course of action which is both efficient in terms of satisfying the needs of the people at minimum cost and acceptable to them in terms of the sacrifices they are expected to make in the way of taxation and other restraints on consumption. That is why Indian five year plans are prepared after the fullest consultation with people through their organized representatives, be they members of Parliament, representatives of trade and industry, associations of university teachers, or organized labour's representatives.

Even when finally adopted, our plans are not a set of orders or directives to be implicitly obeyed but a set of targets which we think our government departments and our farmers and our businessmen can reasonably fulfill with such assistance, financial and other, as the state is able to give them. And by and large our plans are implemented not by physical controls but by appropriate incentives and disincentives operated through the mechanism of the market. With so much to do and with resources limited in the extreme,

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it is imperative for us to order our needs and to avoid waste in the same way as any well-administered enterprise does, by having a series of designs, blue-prints and cost estimates prepared before embarking on a productive program. Indian planning, then, is fully democratic not only in the sense that it reflects the will of the people but also in the sense that it respects and, indeed, encourages the initiative and enterprise of countless individual men and women.

A Decade's Results

The net result of ten years of developmental effort has been that agricultural production in India has increased at an overall rate of about 3 percent per annum and industrial production at slightly over 5 percent, giving the average rate of growth in the total national product of somewhere around 3½ percent per annum. In the meantime, population has grown at the rate of about 1.5 percent per annum so that per capita incomes have increased at the best by no more than 2 percent per annum. With all this effort, the per capita income of India is still only $65 and is among the lowest in the world. The average per capita income of the under-developed world is $100; that of the developed world is a little over $1,250 per annum while that of the richest country in the world, the United States, is now approaching somewhere near $2,500.

If we had a per capita income of any degree of respectability, a rate of growth of 2 percent per annum in per capita incomes might be acceptable. But starting from a base of $65, it is quite obvious that the rate is too slow for the continued maintenance of our political and social stability. This rate must be stepped up rapidly and substantially if we are going to continue to develop within the framework of a democratic society. And here exactly is the challenge (the same that faces the entire under-developed world): can we step up the rate of growth of the economy without forcing upon our people sacrifices which might be so unacceptable as to cause intolerable stresses and strains in the social order? And be it remembered that in a society in which even the basic human wants are very far from being met, the point at which further sacrifices become unbearable is fairly quickly reached.

The first five year plan involved an investment of $6.5 billion, of which a little over $400 million was obtained through loans, grants, and investments from abroad. Thus as much as 93 percent of the total investment in this plan was paid for by the Indian people and only 7 percent from external grants and loans. The chief item in this aid was a loan from the United States for the purchase of two million tons of wheat.

The second five year plan is expected to result in an investment of $13 billion; but in this we have had to rely much more on foreign aid. We have financed 80 percent of our development ourselves, and a substantial portion of the remaining 20 percent that we have needed has come to us in the form of surplus agricultural commodities, the disposal of which causes little strain on either the economies or the individuals of foreign countries.

FOREIGN AID

The proportion in which we in India have relied on foreign aid for our

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development has been considerably less than in many other developing countries; indeed, on a per capita basis aid to India has been less than what most other countries have received since the foreign aid programmes of various governments and international agencies got under way. Nevertheless, foreign aid has played a significant, even crucial, part in our development so far, and the lessons of the last ten years in this regard have powerfully affected the national mind. In the realm of economic planning they have resulted in two conclusions. The first is that the rate of development must be stepped up to as near 6 percent as possible: any lower rate of growth would be dangerous, for it would not make a sufficient impact on the minds of the people to guarantee their continued loyalty to existing institutions. The other conclusion is that India must, as rapidly as she possibly can, cease to be dependent on aid from foreign governments.

This second conclusion is really a question of national pride: to be driven to a position where it would appear that much of our development is dependent on aid obtained through the goodwill of foreign governments, no matter how great that goodwill may be nor how generous the aid may be given, is a situation galling to a self-respecting people. That is why we have made it our declared objective to reach as soon as possible the position where the further growth of the Indian economy could take place without extraordinary forms of external assistance. But this position by itself has the curious effect of requiring a very substantial immediate increase in aid during the period over which this aid must continue, though it sets a definite term, which seems now very well within sight, beyond which further aid would no longer be necessary. The apparent contradiction is, however, easy to explain. In order to make India a viable economy in the sense that she will not only pay her way on current account but have a surplus left for investment which would give her a satisfactory rate of growth, substantial additional investment in the economy is required. We assess that the additional capitalization or the quantum of additional investment required to reach this point (now often referred to as the point of take-off) is about $50 billion. The period during which this amount of capital can be absorbed is about ten years, taking into account the limitations of manpower and organizational capacity which money cannot cure. We can definitely see light at the end of the tunnel; are we going to be able to raise the amount of capital required to carry us all the way through it?

Capital and Totalitarianism

Capital is, of course, the difference betwen current production and current consumption. The higher the production and the lower the consumption, the more rapidly can investment take place and the stronger the basis of the economy becomes. The difficulty of the under-developed world is that both production and consumption are incredibly low and the gap between the two leaves practically nothing to be siphoned away for the purpose of investment. The totalitarian method of enlarging this gap is to hold consumption down at the existing level, sometimes even depressing it quite ruth-

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lessly and devoting the increasing difference between production and consumption, as production grows, purely to purposes of investment. By this means the foundations of a strong economy are laid rapidly, and in a generation or two the productive apparatus thus formed is available for organized society's chosen purposes. It can, with equal facility, be used for increases in individual consumption of material goods or for building up a powerful defense force and somewhat later it can be used for both. In the totalitarian state, however, the individual, who is subjected to all this privation and made to work without an adequate material return, has no voice in the determination of his government's policies. The government can, therefore, extract from the national economy whatever amount of capital it thinks it needs; it is thus in theory wholly independent of foreign aid, though in practice there is no communist country, other than the Soviet Union, which does not receive foreign aid which is sometimes substantial.

Capital and Democracy

Democracies, on the other hand, have a distinct limit to the extent to which they can force their citizens to suffer privation. They are compelled to divert to consumption resources which, in the long view, should go to production. The result is, therefore, a slowing down in the rate of growth to below that which may be statistically possible. If in these circumstances the rate of growth has to be adequate, the only answer is the importation of foreign capital, whether through private foreign investment or through international agencies or directly through foreign governments.

Of the $50 billion required to make India a going concern and to get it to the point at which its further developmental needs will be met from its own resources, we feel that the Indian people will be able, without a breakdown of the system, to provide no less than $40 billion. This is no mean sum for an extremely poor people to set aside; it means a degree of sacrifice that has as yet not been undergone by any peoples in a democracy in either war or peace. But the Indian people are as determined to achieve economic independence as they were to achieve political independence, and they wish (as in the case of their struggle for political freedom) that the sacrifice involved should to the greatest extent possible be their own. Yet even with the greatest of sacrifice, the resources we can raise will fall short of our requirements over the next ten years by $10 billion.

Realistically speaking, it is simply not possible to raise this additional $10 billion from India, and the government of India has, therefore, accepted the policy of attempting to raise this sum from abroad. In doing so we wish to rely as much as we possibly can on commercial operations. We wish, in particular, to increase foreign private investment in India and we have offered for some time, and continue to offer, conditions of investment which, I believe, cannot be bettered by any under-developed country. We wish, in the second place, to borrow in the international capital markets of the world insofar as we can and we wish, thirdly, to utilize to the maximum ex-

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tent the funds available to us from international agencies set up for this purpose.

We feel, however, that the amounts involved are too great for these three sources to meet. We could be greatly helped, and our need for external capital could be reduced, if the import policies of the richer countries were such as to promote freer access to them for the kind of exports that we produce, but sectional interests often stand in the way. While we are willing to accept any amount of private capital, the opportunities for more profitable investment of private capital (for purposes which have low priority in terms of social need but which, nevertheless, result in a commercial profit) are available in the developed countries. This fact stands in the way of capital flowing to us. We feel that the capital markets of the world are still living with the memories of the defaults of thirty years ago, and their shyness is not likely to be overcome in sufficient time for it to be of any use to us; finally, the funds available to the international lending institutions are wholly insufficient for the purpose. We are driven, consequently, to rely for a substantial measure of aid on the governments of the countries willing to help in the task. A billion dollars a year seems a lot of money; when it is realized that this is all that is required to solve the problems of one-seventh of the human race, it ceases to sound quite as much. When it is realized that this amounts to just ten cents out of every $100 earned by the people of the developed world, the figure tends to fall into proper perspective.

CONCLUSION

The basic question before the modern world is whether or not democracy will survive. The survival of democracy throughout the world will depend very largely on the social, political and economic systems the newly independent countries (where the vast majority of humanity lives) decide to adopt for themselves. In the making of this decision, the example of India will play a very substantial part.

India is at present wedded to democracy and wishes passionately to uphold it; there is no reason why this desire should not be fulfilled if we can meet the only challenge to democracy that exists in India, namely, the economic challenge. Given the determination, the willingness to sacrifice and the wisdom of management of the Indian people, this challenge can be met. However, it cannot be met single-handed: the help required is not for a long time nor, judging by the rate at which the wealth of the richer countries is increasing, by any means large. I have no doubt that the help we need will be forthcoming and that we will achieve the ends we have set ourselves to achieve, on the achievement of which so much depends not only for ourselves but for the rest of humanity.

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JOHN A. HANNAH

Point Four: Idea and Reality

". . . the first generation since the dawn of history to believe it practical to make the benefits of civilization available to the whole human race."

The Point Four Program is far too complex, too new, too much still in the evolutionary stage, to permit more than general comments and observations. We can state, however, in simple terms, that Point Four is a program to help people of the underdeveloped third of the world to help themselves.

It was first proposed formally as United States national policy by President Truman in his inaugural address on January 20, 1949. These were his historic words:

> We must embark on a bold new program for making the benefits of our scientific advances and industrial progress available for the improvement and growth of underdeveloped areas. Our aim should be to help the free peoples of the world, through their own efforts, to produce more food, more clothing, more materials for housing, and more mechanical power to lighten their burdens.

Most of the other points in the program President Truman proposed on that occasion have been forgotten, but his fourth point will be long remembered throughout the world. It was simple, as most great ideas are. The aftermath of this idea demonstrates again the great power of a great idea—more powerful in effect than even an atomic bomb.

The Point Four idea was accepted immediately, both at home and abroad. There were two major reasons for its popular acceptance. First, it appealed to the hopes of a world just emerging from the shadows of a great war. It appealed to the aspirations of peoples yearning to be free of colonial domination, and to millions of individuals who could see, for the first time, the possibility of an end to illiteracy, poverty, and disease. The fact that it may have inspired too optimistic hopes for speeding solutions to all of the world's problems is not to its discredit. Second, the idea appealed to the people of America because it went straight to

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the heart of our national culture. Americans, despite all that is said and written and printed to the contrary, are for the most part true disciples of the great Western tradition that has sought through the centuries to give an affirmative answer to the ageless question: Am I my brother's keeper?

THE BACKGROUND

Much had gone before in American history to prepare Americans for Point Four. America is still a relatively young country and has vivid national memories of its antecedents. It retains many emotional ties with other lands, particularly all of the countries of Europe from which most American settlers came. From the history of our own country Americans well understand what an underdeveloped country is, and what can be done with the help of Providence to build it into a position of economic, social, and political strength.

Thinking Americans know the debt we owe to those in other parts of the world. They know that heavy investments of foreign capital made it possible to develop our industrial and transportation systems. They know that billions of investment dollars flowed across the Atlantic from England, and France, and Germany, and the Netherlands, and other countries of Europe while our own industrial revolution was in progress. The memory is fresh because America was a net recipient of foreign investment until the outbreak of World War I.

A Debt to History

Many Americans remember incidents like the one involving Thomas Slater, who defied an English law against the exportation of technological information and carried in his head to America the plans for our first cotton mill. Seventy-eight of our staple agricultural crops in America are not native to our country, but were imported from other lands—this is a good example of technical assistance of the kind we are now trying to repay. Most Americans were ready to receive with enthusiasm President Truman's implied suggestion that it was time we paid our debts to history.

Technical Assistance Programs

We had had some instructive experience with technical assistance programs in World War II in South America and to a limited extent in Africa and in Europe, but these programs had little of the altruism that characterized the Point Four idea.

Later still, we had experience in assisting in economic development through the Marshall Plan, but this experience was not directly pertinent because the Marshall Plan was intended to help, and did help, to restore economic viability where it once had existed. Point Four was intended to help, and has helped, to bring hope to millions whose whole tradition was one of hopelessness.

POINT FOUR IN ACTION

Promulgation of the Point Four idea and its enthusiastic reception caught the United States by surprise, unprepared to adequately undertake a program of any such complexity and magnitude. We did not have readily available a large pool of competent personnel, nor a carefully coordinated body of policy and procedural guides. The early days of the program were days

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of improvisation to meet an unexpected emergency of a stimulating and challenging nature. Americans are accustomed to improvising, and were not appalled by the magnitude of the task they had undertaken.

Inevitably, mistakes were made, and it is easy to criticize Point Four on those grounds, as some politicians and journalists and authors have delighted in doing. But when history measures the successes of the early days of these programs against the failures, the balance will be on the credit side of the ledger.

I have said that the Point Four idea was welcomed with enthusiasm. Its first workers went abroad inspired with almost missionary zeal. They believed—as a majority still believe—that they were privileged to participate in a great crusade against the forces of poverty, disease, and illiteracy which for too long had held so much of the world in bondage. They were pioneers in the finest sense of the word.

Results, Tangible and Intangible

It is best left to the formal reports of governmental agencies to summarize in statistical terms the results of Point Four to date, to depict the wide variety of activities, to enumerate the participants, and to estimate the benefits conferred upon suffering mankind. These reports will indicate the present scope of the program in which many countries of the West, and some in other parts of the world, are now participating on a unilateral basis, to say nothing of the coordinated efforts exerted through the United Nations.

It is a matter for some regret that results must be reported on graphs and in tables of numbers, for such impersonal data cannot reflect the warm personal character of the program in many of its ramifications. I agree with one of the earliest advocates of the program and its second director, Mr. Stanley Andrews, now a member of our Michigan State University faculty, who confesses to a feeling of disillusionment when he contemplates in how many instances programs are now designed in terms that will permit assessment of results only in numbers of tractors placed on the land, numbers of milk cows purchased, numbers of miles traveled by technical experts, numbers of wells dug, numbers of bags of rice produced, etc. Admitting that this may be the inevitable result when any such program is subjected to the rigors of bureaucratic control, he still recalls with nostalgia the days when success was evaluated in terms of the numbers of people helped to help themselves to better living and better lives.

Perhaps it was inevitable that some of the personal interest, the missionary zeal, should diminish in those who carry out the program. But it is a pity, for it was that very spirit of unselfish altruism which gave the Point Four idea its unique appeal.

AN IDEA IN PERIL

It would be a greater pity to let this noble idea degenerate into being a mere instrument of national policy wielded by men with less concern for people than for politics. To let that happen would be to betray the very purpose of the Point Four program as originally conceived and first put into effect. The thirst for technological knowledge has not abated in the de-

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veloping nations of the world, and the opportunities are greater than ever before.

Most observers are agreed that the onset of the Korean War brought about an abrupt change in the political interpretation of the Point Four idea. Previous to that tragic conflict, most programs of technical assistance and economic development had been undertaken in a framework of intent to bring about desirable social and economic changes in underdeveloped countries for the benefit of the people residing in them. With the outbreak of the Korean War, it became plainly evident to the Western nations that they had to contend with an implacable enemy with unswerving purpose —world Communism. As a natural, but regrettable, consequence, programs of technical assistance began to be looked upon as weapons in the cold war; national self-interest began to be taken into account to a far greater extent than ever before.

Weapons in the War

Some leaders in America began to justify expenditure for foreign assistance program in these terms: "If we don't help these people in this manner, they may join the Communist bloc." While not denying the importance of the Point Four programs to the unity and strength of that portion of the world outside the Iron Curtain, how much better it would have been to express our policy in terms which did not suggest bribery!

There is plenty of evidence on hand that sensitive people in lands to which aid is being extended resent the implication that their loyalties and national honor are for sale. As a result, the early enthusiasm for Point Four has diminished there, too, and we have seen too much of marketplace ethics intruded into negotiations over technical assistance programs.

It is my personal opinion, often expressed, that my country has erred in linking military aid and economic aid together so closely. For example, the foreign assistance program recently debated by our Congress proposed to appropriate more than $3 billion for military assistance in one form or another, and much less than $1 billion for technical assistance and development loans. However, to the American people—and to the world—it was made to appear that the total cost for foreign assistance in the next year would be more than $4 billion, and that we evaluated the Point Four technical assistance programs equally with the purchase of military weapons and support of military forces for our allies. Small wonder if the American people and our friends abroad have a distorted picture of our technical assistance programs.

POINT FOUR AND AMERICAN EDUCATION

The Point Four plan has been in effect for more than a decade. It has touched the lives of millions of persons in the underdeveloped countries, but it would be a great mistake to think that it has affected the people in those countries alone.

Profound effects upon the United States are plainly discernible, especially in our educational programs at all levels. There has been, for example, a tremendous upsurge of interest in languages other than English from the

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kindergarten through the graduate schools of our universities. There is a similar great upsurge of interest in the history and cultures of Asia, Africa, and the Middle East. For the first time in history in our country, colleges and universities are deliberately preparing substantial numbers of young men and women for careers in foreign service on a sizeable scale.

This has not happened by chance. It is the result of three principal influences: first, the influence of teachers who have gone abroad on technical assistance missions and returned to inspire their students to know more about foreign lands; second, the influence of thousands of participants in Point Four programs who have come to the United States from all over the world for specialized instruction, and mingled freely with American students; third, the influence of the United Nations, which has captured the imaginations of our young people far more than those of their elders.

Moreover, what happens in the underdeveloped third of the world will determine the kind of a world our children will live in. Perhaps that explains why almost fifty of our United States universities are now making available members of their faculties to the underdeveloped countries of the world to help them develop programs for training their own people to work on their problems and programs.

A Notable Example

As an example, the university that I have the honor to preside over has many faculty members outside the United States cooperating with developing countries in projects including:

- Training teachers in Mexico.
- Training agricultural scientists in Costa Rica.
- Developing agricultural colleges in Medellin and Calí in Colombia, South America.
- Assisting Brazilian universities develop colleges of business administration in Sao Paulo, Rio de Janeiro, Porto Alegre, and Bahia.
- Helping Okinawans develop a complete University of the Ryukyus.
- Helping the University of Taiwan develop a College of Agriculture and a College of Business in Formosa.
- Helping the people of South Vietnam in Saigon develop an Institute in Public Administration for training government workers.
- Cooperating with the Ford Foundation to build and operate two new academies for the training of village leaders in Comilla and Peshawar in Pakistan.
- Cooperating with the government of Nigeria to develop a whole new university at Nsukka to emphasize the training of Nigerians to carry on the work of that new country in agriculture, engineering, and other fields.

APPRAISAL

Today, more than a decade after the historic pronouncement of the Point Four idea, it is possible to make some observations having at least a claim to validity.

Permanence

First, and most important, the Point Four idea of extending technical and

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economic assistance to underdeveloped countries under whatever name has achieved a certain permanence. It is here to stay. The entry of Russia — and of China to a lesser extent — into the area of technical assistance makes it probable that for decades to come all industrialized nations will have to budget a portion of their resources, their talent, and their interest for investment in the underdeveloped nations of the world.

The market for technical knowledge and economic assistance is enormous. New nations are coming into being at a rate unprecedented in world history. Most of them have low incomes, low rates of literacy, and mounting ambitions to be as rich and secure as the older nations whose status they envy and seek to achieve.

John Scott, an American, recently wrote a provocative and frightening book, *Democracy is Not Enough*. It is his contention that we who believe in democracy as the best political system must be prepared to settle now for much less than full democracy in many of these new nations because they simply do not yet possess what he considers to be the prime essentials. It is his feeling that democracy as we think of democracy cannot be expected to work in countries with less than 50 percent adult literacy and less than $200 a year per capita income, and he presents a strong argument in defense of that thesis.

Assuming that he is correct, some idea of the enormity of the task confronting those of us who want to see these new nations become free democracies, in time, may be appreciated by a mere reading of the list of nations failing to meet his minimum standards. Scott lists 55 nations in this category.

Responsibility

Another observation that may be valid is that it is time to consider whether programs of technical assistance and economic development should continue to be administered exclusively by the United States or by nations allied with us militarily and ideologically, or whether it would be better to shift responsibility gradually to the United Nations.

There are many persuasive arguments for the latter course. For one thing, United Nations control would eliminate much of the competitive element in the situation today, and remove a point of friction between the Communist bloc and the West. For another, no matter how innocent we may be of devious motive in our assistance programs, suspicion must linger in the minds of those who have so recently emerged from colonial status. Perhaps suspicion could be allayed or removed were the United Nations to be responsible and take credit for any success achieved. A third argument is a technical one: the United Nations probably could recruit and train technical personnel more easily and effectively than individual nations which must rely largely on their own resources. In this connection, one thinks of the employees in the former colonial services who are losing their employment today. They are fitted by training, temperament, and experience for work in foreign lands under international auspices.

Education

One final observation. Education is the key to the solution to the problems

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of what we are now coming to call the developing countries, rather than underdeveloped countries. Anyone who has seen, as I have, demonstrations of the insatiable hunger for education in Africa and Asia must accept the fact that the masses are determined that education be one of the first fruits of their newly won independence.

Those of us who have our homes in countries where education for all is commonplace have no real standard by which to measure its value. But those who lack education know its true worth and covet it beyond all else. And if you accept as a definition of education *that which brings about a change for the better in a man,* then education is exactly what we have been talking about in discussing the idea of Point Four.

It would be easy to become discouraged, looking at the millions of human beings in Asia, in Africa, and in South America who lack so much and who are so determined to improve their lot in life, and knowing that they expect their more fortunate fellow men to help them attain their goals. The task is so gigantic, the possibilities for error are so numerous, the cost will be so great! But we have no reasonable alternative but to go forward along the course laid out for us by forces beyond our control.

CONCLUSION

The Point Four idea has both stimulated the hunger for technical and economic assistance in the developing countries and encouraged the creation of machinery, however imperfect, to satisfy that hunger. Many thousands of willing hands have turned to this task — unfortunately there has been no opportunity here to comment on all of them, or to pay tribute to the work done by church missions throughout the world, by the private philanthropic foundations, by the nations cooperating under the Colombo Plan, and by the United Nations itself on a modest scale.

If we are tempted to be discouraged by the mistakes and the errors and the lack of vision in some instances, we should take heart from the record of what has been accomplished in a relatively short period in the world's long history, and from the knowledge that the more mature nations of the free world are firmly committed to these programs which are the very antithesis of imperialism and colonialism.

Indeed, history may decide that the greatest contribution of the Point Four idea was to make the people of the free world sensitive to the human needs of their brethren in other lands, to open their eyes to the depth and breadth of those needs, and to stir them to positive actions to meet them.

Finally, let us take comfort and hope from the words of Arnold Toynbee, the great English historian, who has written:

> Our age will be remembered, not for its horrifying crimes or its astonishing inventions, but because it is the first generation since the dawn of history to believe it practical to make the benefits of civilization available to the whole human race.

How better could we hope to be remembered?

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NICHOLAS BALABKINS

The Soviet Economist

The impact of western economic thinking in the Soviet Union

As far as American economists are directly concerned, de-Stalinization after 1953 has meant essentially two things: re-establishment of contact with Soviet economists, both academicians and central planners, and exportation of input-output analysis and of linear programming techniques to the Soviet Union. Over the last seven years, this upsurge of Soviet interest in Western economics has been sustained and lasting.[1] The purpose of the present paper is to examine the significance of the large-scale transplantation of Western economics into Soviet soil. Section I discusses the reasons for the renewed Soviet interest in bourgeois economics. Section II explains why the Soviets are interested only in Western positive economics, and not our political economy, normative economics, or capitalist institutions. Section III contains a brief sketch of the initial rise, subsequent suppression, and recent revival of Soviet positive economics. The paper concludes with an appraisal of the future possibility of East-West scientific exchanges in the field of economics.

I. RENEWED INTEREST

In the Soviet Union the official investment in Marxism-Leninism is very heavy. To Soviet economists, Marxism-Leninism represents the highest stage of economic thought, for only Marxism-Leninism is said to offer the correct scientific world view, which can and will definitively solve all the major problems of the world. The decision of the Soviet leaders to introduce Western planning techniques was quite painful from an ideological point of view, because such importation implied superiority of bourgeois

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economics over Marxian economics. To the old party hacks, such deviations from the semi-sacred Marxian scriptures meant heresy. But the younger generation of the Soviet leaders are not as dogmatic as their fathers. Officially, they recognize the Marxist-Leninist ideology, with its political, economic, and philosophical tenets, represents a system of splendid rationalizations on the meaning of the life and death of Soviet citizens.[2] Moreover, Marxist-Leninist ideology is a grand plan for mankind's salvation from poverty, exploitation, and disease.

However, ideology, per se, will not turn industrial wheels and will not solve the planning problems of the modern Soviet economy. Even though Western input-output analysis and linear programming were officially denounced as lamentable bourgeois apologetics, the younger generation of Soviet economists sensed their practical value for accelerating Soviet economic growth. It was felt that introduction of American techniques in the form of linear programming and input-output methods would be extremely useful in solving economic planning problems, in general, and raising the over-all productivity of the Soviet economy, in particular.[3] Since such changes in planning techniques were designed to forward the military, economic, political and social interests of the Soviet Union, there was a wholesale introduction of Western planning techniques in the form of linear programming, theory of games, dynamic programming, theory of probability, and computer technology; and these subjects were made mandatory for economics majors in the Soviet Union.[4]

The effects of these innovations have been quite bracing, for they have restored economics to its proper place in the field of social sciences. Prior to these changes, economics had to pay heed to politically determined truths, as prescribed by the Agitprop section of the Communist party.[5] The area of scientifically determined truth was very small in the field of economics, and it is only after these recent changes have been made that the area of politically determined truth has begun to recede. This, of course, does not mean that Marxist-Leninist ideology has been eliminated entirely; nevertheless, the likelihood is that the propagation of the official Marxian ideology has been reduced to a formality—a boring necessity.[6] In the future, it is quite probable that Soviet economists, for all practical purposes, will view Marxism-Leninism as "hot air" (in Russian they call it *voda*), and will increasingly devote their time and energy to solving economic problems as "social engineers."[7] That is, they will pay less and less attention to ideology and more to quantitative data. The computer will become more important than the Short History of the Communist Party.

II. LIMITATION OF INTEREST

In order not to over-assess the significance of the large-scale exportation of American planning techniques to the Soviet Union, it is important to note that the Soviets are not interested in the importation of capitalist economic institutions.[8] The institutions of the Soviet Union today are still deeply rooted in collectivist philosophy. Human life takes on value only when it

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serves the state. Within this philosophy the state, not the individual, is given primary consideration. The Communist party sits in the saddle of this one-party democracy. On the economic plane, the Soviet Union remains a centrally planned economy, although post-1957 administrative reforms have attempted to remove some excesses of over-centralization in economic matters. All means of production continue to be owned and operated by the state. In addition to their lack of interest in capitalist economic institutions, the Soviets are equally uninterested in Western political economy or capitalist normative economics. The Soviets make no secret of the fact that only linear programming techniques and input-output analysis are peculiarly "well suited for scientific exchanges between East and West."[9] Given such qualifications, the exportation of some of our economic knowledge to the Soviet Union is not likely to lead to a free and unlimited co-operation between the economists of the two countries. Only utopians and dreamers, people who have always slept and breakfasted in comfort, can hope for such a rosy future.

Three Types of Economics

To indicate the extent and limitations of the East-West exchanges in the field of economics, it is necessary to distinguish between normative economics, positive economics and political economy. *Normative economics* deals with a set of criteria designed to show what ought to be. For example, in the Soviet Union, the revolution of 1917 gave Marxist economics the undisputed leadership in the field of normative economics. Marxism became the hope of the millions of Russians. They were told, (and they believed what they were told) that Marxism represents the shortest way to economic salvation. Private ownership of the means of production was blamed for all the social ills under capitalism. As a social visionary, having identified the main fault of capitalism, Marx urged change, and demanded iron discipline from his followers.[10] The Marxian laws and concepts of the increasing misery of the working classes, the industrial reserve army, the falling rate of profit, and the theory of capitalist crises, described capitalism reeling to its ineluctable doom. Lenin's additions in the form of a theory of imperialism uncovered another force which was to accelerate the inevitable downfall of capitalism. Only in socialist countries, where capitalist contradictions have been eliminated, can prosperity with justice be possible. From this Marxist-Leninist blueprint, the Russians, including their economists, are supposed to construct their picture of the world, for here are the vision, the data, and the arguments.[11]

In contrast to normative economics, *positive economics* refers to the body of knowledge concerning what is.[12] This branch of economics attempts to expound purely economic principles in an apolitical manner. The propositions of positive economics should be independent of political views. For instance, the direct relationship between the price of a good and the quantity supplied, the inverse relationship between the price and the quantity demanded, and Gresham's Law, to mention just a few, are valid regardless of

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one's views on politics, philosophy, and private property. Linear programming and input-output analysis likewise belong to this branch of economics. The third branch of economics, *political economy*, deals primarily with matters of public policy by providing the "rules for attainment of a given end,"[13] within a given institutional framework. For the American political economists, in their capacity as policy makers and economic analysts, the institution of private ownership in the means of production is *given*. On a political level, two or more party democracy is another datum. Only by taking into consideration these basic institutions of capitalist economies can an economist make meaningful direct policy recommendations. He must always assess the political possibilities of a particular course of action within the existing institutional framework. He is not concerned with the right or wrong of such institutions per se. Neither do Soviet political economists question the rights or wrongs of state ownership of the basic means of production or the institution of central planning. They too take the institutional framework as given.

III. POSITIVE ECONOMICS

In the annals of Soviet economic thought, the period from 1917 to (roughly) 1928 will remain known as the happy decade of relatively free scientific discussion. To be sure, Marxian economics, with its sweeping pronouncements, was an undisputed leader in the discipline, but non-Marxian economics was still tolerated. For instance, up to 1922 there was published a theoretical economic journal, *Ekonomist*, which openly professed the principles of laissez-faire.[14] This period witnessed the first beginnings of modern input-output analysis anywhere in the world.[15]

The great industrialization debate between Preobrazhensky, Trotsky, and Bukharin, to mention only the best known participants, with its sharp, erudite, and witty intellectual exchanges, attests to the relatively unregimented position of the intellectuals. The acme of this intellectual ferment was N. D. Kondratieff's work on business cycles. From 1920 to 1928 Kondratieff was a director of the Business Research Institute in Moscow, where he developed his famous hypothesis of long-run business cycles.[16] Although his work was rejected by Soviet economists as an ideological aberration, it still became subject of a prolonged, acrimonious controversy. It was not a sham controversy, for both parties were trying to elicit truth and not just to win the argument. However, in the latter stages of the discussion, a number of purely political developments within the Soviet Union augured ill for Kondratieff. The intellectuals, who had dominated the Communist party from the Revolution on, were beginning to lose their grip on the party. The "educated revolutionaries" knew that enthusiastic workers alone would be unable to turn the wheels of industry, and that the impoverished peasants, without guidance, could not feed the cities.[17] Therefore they appreciated the cooperation of specialists and scientists in the task of building socialism in the backward, post-war Soviet Union.

After Stalin had successfully eliminated his chief opponents, who, al-

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though they were also genuine Marxist stalwarts, tended to be "educated revolutionaries", the decade of relative intellectual freedom came to a sudden end. Kondratieff, for instance, was removed from his post in 1928 for alleged counter-revolutionary activities, and he disappeared without a trace in the fall of 1930. Today, almost thirty years later, his whereabouts and his work remain unknown. Thousands of fellow-economists met with a similar fate, and the beginning of Stalinist rule marked the end of positive economics in the Soviet Union.

Regimentation

From the early 1930's up to the very end of Stalin's days in 1953, scientific research in economics was regimented in the most authoritarian manner. From then on, Marxism-Leninism (with Stalin's additions) became the ultimate source of objective truth in the social sciences. According to orthodox Marxist theory, where there is class conflict, truth is obscured by the class interest. In the Soviet Union, the Communist party as the protector of the proletarians is able to perceive truth pure and uncorrupted through Marxist-Leninist glasses, and nobody may question that truth. Since only Soviet normative economics in the form of Marxism-Leninism was blessed, the Soviet academic economists were either cautiously interpreting and re-interpreting the works of Marx, Engels, Lenin, and Stalin, or they were engaged in describing the practical problems of the Soviet government. Originality was shunned out of constant fear of denunciation and deportation to work camps. Instead of doing original work, the Soviet economists collected quotes and commented upon quotes of the infallible leaders of the Marxian gospel. In fact, "quotationism" became the salient feature of Soviet economics during that period.[18] To play safe, the current policy slogans of accepted political authorities on all economic questions were cited time and again by Soviet economists. As the area of politically determined truth expanded and the area of scientifically determined truth shrank, economics as a scientific discipline ceased to exist. Economics became a party-bound science.[19] The iron grip of the official ideology was universally imposed, and Soviet economists timidly parroted the policy slogans or busied themselves with safe quotes.[20] During these years of intellectual regimentation, scientific sterility and isolation, Soviet economists dismissed and discarded all Western economists as "lackeys of the bourgeoisie."[21] All branches of Western economics, positive economics, normative economics, and our political economy were discussed only in terms of crude caricature.[22]

The Soviet Attitude

The conspicuous features of the Soviet attitudes toward Western economic thought in general during the Stalinist period may be briefly summarized as follows:

Intellectual sterility. Since Marxism-Leninism is the only officially tolerated truth, the Soviet economists had to work with conclusions rigidly predetermined by the normative Marxian concepts. These normative concepts imposed the so-called Procrustean bed method upon the Soviet economists in evaluating the work of non-Marxian

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economists. Empirical data, logical evidence, plain facts are dismissed as shallow and superficial attitudes of the lamentable "bourgeois objectivity." As true disciples of Marx, Soviet economists had to impress their opponents by the coherence and completeness of their doctrines, regardless of whether or not they were true. They were primarily concerned with winning all arguments, and showed only scant interest in eliciting truth. The intellectual timidity and scientific sterility of the Soviet economist were the inevitable by-products of ruthless regimentation. Experience taught the Soviet economists that no matter how logical or how well substantiated were even the smallest deviations from the Marxain Bible, they were always subject to ruthless suppression. Under such circumstances, intellectual slavery resulted.

Abusiveness. The barbed and ferocious language used clearly reflects the highly inflexible attitude of Soviet economists towards non-Marxian economics. Since Marx, Engels, Lenin, and Stalin have settled all social questions wtih excellence and definitiveness, and since only the creators of Marxian vision provide truly correct answers to all social questions, non-Marxist economists are not only in error, but in sin as well. The Soviet economists condemned non-Marxian economists for moral reasons. The Soviet Marxists instill religious fervor into their works, and they do not accept any deviations from the Marxian scriptures. Hence the Soviet economists of this period were not so much social scientists as simply members of the Marxian priesthood.[23]

Deliberate Distortion. To Soviet economists, empirical data do not connote scientific objectivity but rather the "statistical ingenuity" of bourgeois economists. On the basis of inexorable Marxian laws of capitalist development, the capitalist economies are always described in most arbitrary terms of absolute and relative impoverishment of the workers, in terms of mass unemployment, moral and cultural rottenness of capitalist society, utter lack of health and social benefits, etc. The fact that slogans of such neurotic hate do not apply to actual conditions prevailing in western capitalist countries does not disturb them. The Soviet economists of the Stalin period have long known that there was a considerable discrepancy between Marxian preaching and the real facts. With a shrug of the shoulders, they snap back by saying that it is just too bad for facts if they do not support the theory.

Reawakening

After Stalin's death it was officially conceded that the former extreme regimentation of social scientists in general and economists in particular could serve no useful purpose. Economists were now "prodded to get up off their knees."[24] They were granted considerable freedom of research. The secrecy code was partially scrapped and Soviet economists could work with primary data and publish their findings without violating the List of Information Comprising State Secrets of June 8, 1947 and the Law of Counter-Revolutionary Activities.[25] Travel abroad was again permitted, and the establishment of personal and professional contacts was encouraged to widen the

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perspectives of Soviet economists.[26]

This was the long-expected re-awakening of positive economics in the Soviet Union. Schumpeter, in his magnum opus, prophesied that Stalinist repression of economic analysis could not last forever, because it is impossible to operate a modern industrial economy by Marxian rule of thumb.[27] The rational and efficient allocation of resources, especially the planning of investment outlays, requires an analytical apparatus, regardless of whether one is dealing with capitalist or socialist scarcities of resources. The Soviets have realized this belatedly and now problems of labor and capital productivity, location of plants, to mention only a few items, have again become subjects of scientific inquiry. The formerly neglected mathematical economists now occupy prominent administrative and academic posts,[28] and a younger generation of economists with good mathematical backgrounds are slowly taking over the field.

However, the old Stalinist stalwarts and hacks are still very much in evidence. For instance, I. G. Bliumin argues that although Leontief's input-output analysis may be of some interest to Soviet economists, it must be purified of its major flaws before it can be used in the Soviet Union.[29] In Bliumin's view, Leontief's model suffers from two major deficiencies: it is based upon the "Walrasian theory of equilibrium," and Leontief's work does not touch upon "those problems of political economy around which the bitter ideological war is fought."[30] Likewise, the reviewers of W. Leontief's volume in Russian are critical of his "wrong premisses of political economy," although they see considerable future for input-output analysis in the Soviet Union.[31] Even V. Nemchinov, who is aware that economics is a more quantitative than qualitative science, and who knows that Western input-output techniques and linear programming would be extremely beneficial to the Soviet economy, still insists that Leontief's model must be purified of his ideological aberrations before it can be adapted to Soviet needs.[32]

This sample of Soviet economists' reaction to Western linear programming and input-output analysis is quite baffling, especially if one keeps in mind that the application of these techniques would probably raise the productivity of Soviet economy significantly. On the other hand, one should not forget that in a totalitarian state like the Soviet Union all matters are decided by political authorities.[33] Since in the past even the slightest deviations from the semi-sacred Marxian scriptures have been repressed in a most brutal manner, no matter how practically important such deviations might have been, the economists are cautious for reasons of personal safety. They know that in spite of recent deviations from the doctrinaire past, Soviet ideology is still the "controlling factor."[34] It is, of course, quite probable that in the area of positive economics denigrating epigrams and occasional broadsides against bourgeois positive economics will be used as mere window-dressing, while its theorems are quietly put into practice. However, no matter how dull and boring the purely ideological considerations may be, no Soviet economist is likely to go about his work without making formal obeisance to the official line.

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IV. POLITICAL ECONOMY

In the field of political economy, there seems to have been hardly any change in the previously inflexible attitude towards bourgeois economics.[35] Here the past taboos and Marxian platitudes *are* still supreme. Most of the Western economists are discussed in unusually caustic terms, with occasional lapses into downright slander. For instance,[36] American institutionalism is described as one branch of "modern apologetics devising new methods for the cheating of American workers." Veblen is called an apologist of imperialism, while Commons is dubbed a "sincere glorifier" of the monopoly rule.[37] Present-day Keynesianism is said to have developed "a considerable flexibility and sharpness in the matter of cheating working masses."[38] Government intervention, for example, argues Bliumin, in fighting unemployment actually only fills the pockets of monopolists. Such simplifications to the point of imbecility abound. In one sweeping generalization, Bliumin denounces the best known American economists, such as Stigler, Slichter, J. M. Clark, Galbraith, Schumpeter, Machlup, Chamberlin, Lilienthal, Chase, Hansen, Ayres, Hoover, Harris, Bachman, and Chandler as apologists of monopolies and lackeys of the bourgeoisie. Instead of examining and scrutinizing the assumptions and conclusions of these writers, Bliumin discards the work of American economists as not only intellectually erroneous but also morally unacceptable. He voices this disapproval with the zeal and religious fervor of a true Marxian believer. Here Marxian normative economics, with its dogmatism and militant ideology, eliminates any possibility of balance, judicious circumspection and sanity. In the field of political economy, the present warfare will probably continue to prevail.

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1. W. Leontief, "The Decline and Rise of Soviet Economic Science," *Foreign Affairs*, XXXVIII, No. 2 (January, 1960), 261-72.

2. For a typical Soviet account of Marxist-Leninist ideology, see "Mirovozreneie" [World-view] in *Bolshaya Sovetskaya Entsiklopedia* [Great Soviet Encyclopedia] XXVII, 574-76, and "Ideologija" [Ideology] *ibid.*, XVII, 333-37.

3. W. Leontief, *op. cit.*, p. 268.

4. See H. S. Levine, "Bloknot Ekonomista/ Conversations with the Planners," *Soviet Survey*, XXX (October-December, 1959), 8.

5. For a good example of the Stalinist-period Soviet economics, see "Teaching of Economics in the Soviet Union" *American Economic Review*, XXXIV (September, 1944), 501-30.

6. For some extremely interesting implications of this, see Moore Barrington, Jr., "Influence of Political Creeds on the Acceptance of Theories," in the collection of essays edited by P. Frank under the title *The Validation of Scientific Theories* (Boston: Beacon Press, 1959), pp. 29-36.

7. This point is well developed in V. Nemchinov, "Primerenie matematicheskich metodov v ekonomicheskich issledovanijach i planirovanii," [The Use of Mathematical Methods in Economic Analysis and Planning], *Voprosy Ekonomiki*, VI (June, 1960), 13.

8. W. Leontief, *op. cit.*, p. 265.

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9. W. Leontief, *op. cit.*, p. 260.

10. For an illuminating discussion of Marx of a recent vintage, see J. K. Galbraith, *The Affluent Society* (Boston: Houghton Mifflin, 1958), pp. 64-67.

11. Academiya Nauk SSR. *Politisheskaya Ekonomiya Uchebnik* [Academy of Sciences SSR Political Economy Textbook] Moscow, 1958, pp. 7-16, provides a good introduction to Soviet normative economics.

12. The basic work on these matters is still John Neville Keynes's *The Scope and Method of Political Economy*, London, 1891.

13. John Neville Keynes, *ibid.*, p. 35.

14. E. H. Carr, *Socialism in One Country, 1924-1926* (London: Macmillan, 1958), p. 65.

15. W. Leontief, *op. cit.*, p. 269.

16. For a splendid summary of Kondratieff's work, see G. Garvy, "Krondratieff's Theory of Long Cycles" reprinted in A. H. Hansen and R. V. Clemence, *Readings in Business Cycles and National Income*, New York, 1953, pp. 438-66.

17. E. H. Carr, *op. cit.*, pp. 120-23, 137-86.

18. A. Nove, "Economics in the U.S.S.R.," *Soviet Affairs*, I (1956), 63.

19. For a typical account of these matters see I. G. Bliumin, *Ocherki Sovremennoi Burshuaznoi Politicheskoi Ekonomii S.Sh.A.* [Outline of the Contemporary Bourgeois Political Economy of the USA] Moscow, 1956, p. 3. For my review of this volume see *Business Horizons*, II, No. 3 (Fall, 1959), 122-27.

20. For a good discussion of Soviet ideology see H. Marcuse, *Soviet Marxism* (New York: Columbia University Press, 1958), pp. 91, 121-35.

21. A. Ayzenshtadt, "The Learned Handmaidens of American Capitalism," *American Economic Review*, XXXIX, No. 5 (1949), 930-45, is rather typical.

22. Very informing are the three articles by A. Zauberman, "Economic Thought in the Soviet Union," *The Review of Economic Studies*, XVI (1949) and XVII (1950).

23. A. Zauberman, *ibid.*, XVI (1949), p. 199.

24. A. Nove, *op. cit.*, p. 66.

25. For some further observations on this particular point, see H. J. Berman, "The 'Right to Knowledge in the Soviet Union'," *Columbia Law Review*, LIV (1954) 760. See also P. E. Mosley, "Russia Revisited, Moscow Dialogues 1956," *Foreign Affairs*, XXXV, No. 1, 76.

26. "Za razshirenie nauchnich svjazij Sovetskich i zarubezhnich ekonomistov," [For the widening of scientific ties between Soviet and foreign economists], *Voprosy Ekonomiki*, XI (November, 1957), 158-60.

27. J. A. Schumpeter, *History of Economic Analysis* (New York: Oxford University Press, 1954), p. 1,159.

28. H. S. Levine, *op. cit.*, p. 4.

29. I. G. Bliumin and Schljapentoch, "Ob ekonometricheskom napravlenii v Burshuaznoi Politicheskoi Ekonomii," [On Econometric Tendencies in Bourgeois Political Economy] *Voprosy Ekonomiki* XI (November, 1958), 90-91.

30. *loc. cit.*

31. V. Belkin, I. and Birman, "Kniga Amerikanskich Ekonomistov o Metode 'Zatrati-Pipusk Produkcii'," [Book of American Economists on the Input-Output Method], *Voprosy Ekonomiki* VI (June, 1959), 113.

32. H. S. Levine, *op. cit.*, pp. 4-5, 12.

33. J. L. Talmon, *The Origins of Totalitarian Democracy* (London: Secker & Warburg, 1955), pp. 1-2.

34. J. K. Galbraith, *Journey to Poland and Yugoslavia* (Cambridge, Mass.: Harvard University Press, 1958), p. 100.

35. I have analyzed the dogmatic Soviet attitude towards Western economic theory in a series of articles: e. g., "Soviet View of Contemporary Western Economic Thought," *Il Politico*, XXIII, No. 3 (September, 1958), pp. 459-67; "A Recent Soviet Assessment of American Economists," *ibid.*, XXIV, No. 3 (September, 1959), 472-79; and "A Soviet Version of Contemporary 'Bourgeois' Political Economy," *ibid.*, XXV, No. 2 (June, 1960).

36. Out of a mass of literature, I have used the following works for illustration purposes:

Academiya Nauk SSR. *Politicheskaya Ekonomiya Uchebnik.* (Academy of Sciences SSR. Political Economy Textbook) Moscow, 1958, pp. 295-322.

I. G. Bliumin, *Ocherki Sovremennoi Burshuaznoi Politicheskoi Ekonomii S.Sh.A.* [Outline of the Contemporary Bourgeois Political Economy of the USA] Moscow, 1956, 279 pages.

I. G. Bliumin, *O Sovremennoi Burshuaznoi Politicheskoi Ekonomii*, Moscow, 1958, 158 pages.

37. I. G. Bliumin, *op. cit.*, pp. 51-57.

38. *Ibid.*, p. 67.

STANLEY C. HOLLANDER
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Henry Ford, Grocer

The automobile firm's commissaries furnish a little-known incident in retail history

In 1927 *The Michigan Tradesman* (a retail trade magazine) described Henry Ford as a ". . . distributing and marketing genius such as the world has never before produced."[1] The accolade was not conferred without resentment. Both were inspired by Ford's unique venture into grocery and clothing retailing: the Ford commissary stores.

The first Ford commissary was opened in December, 1919 for the benefit of workers at the Ford Highland Park plant, and was soon followed by others. In 1926, when the stores reached a peak in their growth and excited national attention, there were eleven, scattered from Michigan's Upper Peninsula to Twin Branch, West Virginia. Three stores in the Detroit area (Highland Park, Fordson, and Lincoln commissaries) most nearly resembled the modern supermarket, did most of the business, excited widespread attention, and induced an extensive boycott of Ford cars and trucks. It is mainly with these three stores, especially Highland Park, that we shall be concerned.

Although the Ford stores did not use self service as do the modern supermarkets, their stock handling logistics and merchandising methods yielded efficiencies unequaled by many supermarkets. In 1926, the eleven commissaries sold $12 million worth of merchandise. Sales at Highland Park alone reached almost $7 million that year. This one store sold 235,000 pounds of meat every month, undersold all competitive stores including the chains (except on leader items), and supposedly earned a profit of $262,538.00, or approximately 3.8 percent on sales.

Most authorities consider the early 1930's as the birthdate of the supermarket. If so, Henry Ford anticipated

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this major retailing innovation by at least ten years, since he opened his first store on December 3, 1919, and it quickly assumed modern supermarket characteristics. However, the Ford stores have received little notice in the formal, academic literature of retailing. Consequently, one question which we attempt to answer is: did these stores have any appreciable influence on the development of retail institutions in this country? The answer seems to be that the stores were an exciting incident, interesting in themselves, but without any of the significance they might have had for retail history. The stubborn personality of Henry Ford provides a partial explanation for that failure in influence; organized and unorganized opposition in retail circles provides another part of the explanation.

THE HISTORICAL SETTING

The genesis of the Ford stores can best be appreciated in the light of the economics of 1914-1920. Consumer prices had risen sharply during both the war and the first two postwar years. Many employers raised wage rates, but the increase was less than the rising prices or at best equal to them. In both official circles and among men on the street there was prevalent the rather naive belief that these price increases were the work of some villainous characters called profiteers. Find the profiteers, punish them, and the inflation would be ended.

Consequently, some large employers decided to bring their purchasing power and facilities to the aid of their workers in an attack on the price side of the wage: price ratio. They did this by opening company stores, and also, in some cases, by allowing the workers to submit orders to be filled by the purchasing office. Some of the stores were operated as consumer cooperatives under employee management, while others were company directed and managed.

In the Detroit area, both Ford and the Ford workers claimed that the benefits of his famous five-dollar-a-day wage were being nullified by margin increases among retailers. As Henry Ford said later:

> We had to branch into storekeeping at Highland Park in 1919 because rents and prices were everywhere being forced up on our men, and it seemed useless to pay good wages if the men could not get value for them.[2]

It was in this general background of "fighting the profiteer" that the Ford Motor Company announced on December 3, 1919 that it would open a store to sell to its employees at cost on a cash-and-carry basis.[3] This store, at Highland Park, was an immediate success and others were opened shortly afterward.

Why Were the Stores Established?

We cannot be certain whether the commissary stores were Ford's idea or the thought of one of his subordinates. The Ford archives contain no memoranda proposing the creation of the stores, nor any of the voluminous reports that would be associated with such an undertaking in a modern corporation. Communications were largely verbal in 1919, and often went only one way: from Mr. Ford to the subordinate.

The high degree of centralized control that prevailed in the company at that time provides a good indication that the stores could not have opened

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without Henry Ford's approval. His defense of the stores when they later came under attack from retail competitors also suggests that the commissaries were close to his heart.

Considerations other than that of fighting the profiteer may have entered the decision to establish the stores. When we examine the way in which the stores were supplied from the Ford farms and Ford mills, we can see how they might have fitted in with Henry Ford's dream of a self-contained agricultural and industrial empire. Another influence may have been the Sociological Department, which was created in 1914 to administer the five-dollar-a-day wage plan. In its broadest phases, it performed the tasks of investigating and counseling the workers on subjects such as home and family environment. The influence of this department was still strong in the company and in Ford's thinking in 1919, and we can find some evidence that the stores were supposed to teach the workers how to use their money wisely.[4]

Ford may also have had some thoughts that his principles of mass production and limited product variation could revolutionize mass retailing. He did express this sentiment, although in surprisingly hesitant fashion, in 1926. However, this was seven years after the establishment of the stores; we cannot tell if these thoughts were a reason for starting the stores or an outcome of their operation.

THE RETAILING ASSEMBLY LINE

Many labor-saving techniques that may have been borrowed from the production line appeared in the Ford commissaries. Although the arrangement of the stores varied somewhat from time to time, and improvements in operations were developed at various dates, a description of the grocery and meat departments at Highland Park in the mid-twenties will indicate how far the Ford commissaries went towards developing a highly efficient machine for food retailing.

Operations

To the customer, the Highland Park grocery department appeared as an aisle, about twelve to fifteen feet wide and about one hundred feet long, located just inside the south wall of the factory building. At one end of the aisle were doors that served as the entrance to the department from the street; the exit and cashiers were at the other end. Thus customers moved along the aisle from entrance to exit much as car assemblies moved through the plant.

The building wall established one side of the shopping aisle, and a large continuous counter marked the opposite side. This was about thirty inches high, topped by a continuous glass display case, another eighteen inches in height, with samples of all of the grocery merchandise in the store. The salesclerks stood behind this counter, and their side was equipped with a convenient ledge for handling sales checks.

Open shelves about two feet deep formed a continuous row behind the salesclerks. These shelves held the merchandise to be sold, and were replenished from the rear. The clerks naturally reached for the packages that were at the front of the shelves, and thus the oldest merchandise was

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always sold first and stock deterioration was held to a minimum.

Warehouse, processing and handling areas were located behind the shelves. This portion of the store was served by a freight entrance and unloading platforms that provided sheltered space for handling both rail and truck shipments. Merchandise moved in straightforward fashion from the railroad car to the customer's hand. The traffic pattern was designed so that the commissary personnel did not interfere with the customers and the customers did not disrupt the commissary personnel's systematic work patterns.[5] Thus fewer sales people served more customers.

The arrangement of the meat department was similar; the counters were refrigerated cases holding much of the stock that was ready for immediate sale. This eliminated the shelving behind the salesclerks and gave them immediate access to the meat cutting areas in the rear of the store. Scales, wrapping paper and other facilities were placed at convenient locations behind the counter for use by the meat clerks.[6]

Labor-Saving Devices

By 1926 many other labor-saving innovations had been introduced into the stores. In the meat department, whole animal carcasses were brought to the store in truck-load lots and conveyed to the refrigerator on an overhead trolley. Each carcass was weighed automatically as it entered the refrigerator. When needed, it again was moved by trolley to the cutting area. The cutting area operated somewhat like an assembly line in reverse, yielding pre-cut and prepriced meats.[7]

Henry Ford put gravity to work in the Highland Park store. Bulk goods, such as dried beans and peas, were stored in bins on the third floor of the store and conveyed via conduit and spout systems to the second. There several girls spent eight hours a day packaging and pricing these items with the aid of an automatic weighing machine.[8] A stock clerk watched the grocery shelves, and ordered replenishments from the upstairs stockroom by telephone. A conveyor system brought the merchandise to him, just as the assembly line brought the automobile chassis to the worker in the factory.[9]

The store management attempted to keep the flow of work and customers as constant as possible to avoid the problem of loafing clerks and idle capacity alternating with frantic rushes. One way was to specialize certain workers' duties. For example, one man did nothing but cut cheese every afternoon, while another spent his entire day reclaiming waste paper, crates and cartons.[10] On the other hand, the salesclerks were expected to be able to adjust to the needs of customer traffic, and to sell in any part of the store. During slack periods they prepared shoes and clothing for mail order from the outlying Ford plants, and lent a hand wherever they might be needed. Another method of equalizing the load was to have the plant security officers accept written orders from the workers as they filed in during the morning. Commissary employees filled these orders during the slack hours of the day, and had them ready for the workers to pick up on their way home.

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The Traveling Check System

A traveling check system was used at the Highland Park store as early as March, 1920 and soon was installed in the other stores.[11] Each customer who entered the store was handed a serially-numbered three-part sales check. One portion of the check was used to record grocery and meat purchases, another for clothing and shoes, and the third part for listing drugs and sundries. The customer carried the check with him while selecting his purchases, and the clerks recorded items and prices on the appropriate portions of the check. After selecting what he wanted, the customer took his purchases and the check to a checkout cashier at the exit section of the store. The cashier totalled the bill, received payment, receipted and returned the check, which then served as an exit visa to allow the customer out of the store.

The serially-numbered ticket was also coded, the code changing with every five hundred numbers, to prevent the problem of stolen or forged sales checks. The clerks were trained to take up the customer's sales check before handing over any merchandise, and in most cases, the transfer of the item to the customer and its notation on the salescheck occurred simultaneously.[12] This obviated the need for shoplifting controls. The general store design, the fixtures, the stock arrangement, the traveling check system, and the training of the salespeople combined to provide for the safe, rapid and efficient distribution of large quantities of merchandise from limited assortments.

Advertising

The low prices charged in the commissaries were the major device for attracting trade. Other forms of sales promotion received little attention, although news items, price lists, editorials urging support of the stores and occasional "advertisements" appeared in the *Ford News* for a few years during the early 1920's. Advertisements for the stores were printed on the backs of company pay envelopes several years later, but this promotion was also discontinued. A sign painter prepared price signs to be used in the store and worked up display material for a few featured products such as Ford apples and Ford flour.[13]

The Merchandise

At first the commissary assortments consisted of items which management felt the workers ought to buy. Beginning in 1921 the policy gradually shifted until by 1927 the stores were very consumer oriented, although staple items at low prices tended to be the dominant stock at all times.[14] Items such as small appliances and fountain pens were added to the merchandise mix. The commissaries were the first Sunbeam electrical appliance dealers in the Detroit area, and for many years sold more Sunbeam mixers than any other outlet in the community.[15]

Merchandise was pre-cut and prepacked. The customers had to take the steaks, cheese and other items (except roasts) just as they were displayed in the meat counters. Butter was sold by the pound, and eggs only by the dozen, contrary to the practice in many small stores. Peas, rice and similar bulk items were pre-bagged

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before they were sent to the selling floor.[16]

Custom tailored suits and overcoats were offered in 1919, but met with little success. A ready-to-wear line was added in May, 1920,[17] and for a while, an average of 75 ready-to-wear suits were sold per day.[18] However clothing sales soon dwindled, and after a series of price reductions failed to increase sales satisfactorily, the suit department was closed in January, 1922[19] Perhaps the plant workers didn't need very many suits.

Henry Ford's trump cards in the stores were low rent, private labels, and quantity buying to satisfy quality specifications, rather than brand specifications. Coffee, tea, flour and other staples were packed with "Ford" written in script on each package. Butter was labeled "churned expressly for the Ford Motor Company." Ten to eleven dollar shoes, reputedly made by Nunn-Bush, were sold for $6.95 with the Ford label impressed into the instep.[20]

Whereas some stores emphasize consistency and breadth of assortment, the commissary customers would accept substitute brands, and private branding allowed narrower assortments. The extremely popular drug department at Highland Park operated in 1927 with only 900 items, compared to thousands in the conventional drug store. Women's hosiery was carried in only three price lines and in only one brand at each price. However, the customers were allowed to select from eleven different shades at each price.

With this merchandising approach, plus the large quantities involved, the commissaries were able to combine two advantages which would be incompatible in the smaller store: the commissaries were able to keep their turnover high while purchasing in large lots. Although accurate comparative statistics are unavailable, the following figures are probably at least two to three times as high as the turnover rate of most of the commissary's competitors, with the exception of chain grocery stores. Hosiery stocks were turned 72 times a year, meats 176, groceries 30, drugs and dry goods 24, and shoes almost 5 times.[21] The Highland Park commissary sold its average item 19 days after it was shipped from the source; yet, because of customary credit terms, Ford did not have to pay for that item until 16 days later. When the commissary was in full swing, Ford had little or no investment in the store merchandise, as his suppliers carried all of it.[22]

Integration

Fordson tractors cultivated the Henry Ford farms to produce Ford food, which was transported by the Ford-owned Detroit, Toledo & Ironton Railroad to the Ford stores. Even the men who worked on the farms came from the Ford factories. Henry Ford's philosophy held that a man should know the soil as well as the shop.[23] Thus the capital, the labor, and the land were integrated to produce and sell food as well as flivvers.

Industrial by-products were put to use in the system. The Ford Hospital Laboratory manufactured such items as "Ford Laxative Cold Tablets," and "Ford Antiseptic Mouth Wash."[24] Aspirin, also manufactured in the laboratory, was a by-product of coke-making activities. Under the Ford label, it sold in 100-tablet bottles for

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20¢ at a time when nationally advertised brands retailed at 12 tablets for 18¢.[25] The hospital laboratory checked the quality of the food sold in the commissary, while the hospital laundries cleaned commissary and cafeteria employees' uniforms.[26]

Waste materials from the stores were put to use instead of being discarded. The tissue paper that protected the oranges shipped from the Ford groves was carefully baled and then reused. Bones from the butcher shop were sold for fertilizer and bone meal was used as a sweeping compound. Waste suet was boiled down to grease which was then used in the motor car plants.[27]

Prices

One does not have to be a very sophisticated statistician to realize the difficulties involved in making price comparisons between two or three types of stores that were operating thirty to forty years ago. However, we can draw upon some published reports that suggest the attractiveness of the commissaries' prices.

Exhibit I is a list of supposedly representative prices at the Highland Park commissary and at competitive stores, prepared by a Detroit newspaper in September 1920. It shows a very pronounced advantage for the commissary. Comparable savings were still available at the commissaries several years later, when they attracted more newspaper attention.

An editorial comment of the *Detroit Free Press*, which would not have been likely to be biased in favor of the Ford stores, emphasized the bargains those stores offered in 1927:

EXHIBIT I

FORD GROCERY REDUCES H. C. L.

	Ford	General Grocery Stores
Salada Tea (best) per lb.	.68	.75– .80
Coffee (special) per lb.	.35– .40	.45– .60
Olive Oil (high grade) per qt.	$1.41	$1.75 and up
Rolled Oats (bulk) per lb.	.05	.07– .08
Libby's Corned Beef, 1 lb. can	.23	.35– .40
Peas, canned, standard brands	.14– .22	.15, .18, .20, .25
Butter (3,000 lbs. sold per day) per lb.	.62	.70– .72
Eggs (best), per doz.	.61	.65– .70
Sugar, per lb.	.16	.16– .17
Campbell's soups	.12	.14– .15
Salmon, per can	.20– .32	.20– .55
Corn, per can	.12	.15– .20
Gold Medal Flour (per 25 lb. sack)	$1.85–1.95	$2.05–2.15
Ford Flour	$1.76	$1.85–2.00 (comparable grades)
Eagle Condensed Milk	.26	.30
Rumford Baking Powder	.27	.30
Calumet Baking Powder	.23	.26– .30
Peaches (2½ lb. cans)	.36	.40, .50, .60
Pineapples (2½ lb. cans)	.33	.50
Tomatoes (2½ lb. cans)	.16	.25
Palmolive Soap	.08	.09– .10

Source: Detroit *Journal*, September 27, 1920

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The divergencies between the retail prices in force in the Ford Stores, particularly in the meat shops, and those in force in provision stores generally, are so large that they account for a considerable percentage of the cost of living for the ordinary family. And the fact that Mr. Ford has uniformly been furnishing his customers with first grade goods adds emphasis to the contrast.[28]

Sanitation and Appearance

The Ford commissaries provided a foretaste of the supermarket not only in operating methods and low prices, but in general cleanliness and neatness as well. Even the retailers who worried about Ford competition had to admit: "The outside of the Fordson Commissary looks like any other factory building, but the inside is very neat, clean, light and sanitary."[29] Or, as one customer said: "I did not go to the Ford market because of price . . . I went there because I saw at a glance that the sanitary engineer was on the job and the quality of the product was the best that the market could supply."[30]

HENRY FORD VS. THE RETAILERS

Although the commissary stores were opened primarily for the benefit of Ford employees, the general public sought to take advantage of them also. The public was formally banned in 1921, on the grounds that it was a nuisance and that it was preventing deserving Ford employees from being waited on promptly and efficiently. However, outsiders continued to borrow employee badges to gain admittance.

In 1926, Henry Ford described the stores as "restricted to our employees and executives."[31] However, in late autum, 1926, the company announced that it could not keep its workers from lending their badges to friends and neighbors, that all efforts to close the stores to the public were unavailing, and that all restrictions on trade would be removed.[32]

The Detroit retailers feared the commissaries' huge size; they felt that Henry Ford's attitude and the commissary prices implied that they were robbing the public; and most of all they worried that they would be driven out of business. They tried to console themselves by asserting that consumers really wanted friendly, chatty dealings with salesclerks and a smile with every purchase. However, success is difficult to argue with and the commissaries' minimal service, low price, high volume and narrow assortments were certainly successful.

A Storm of Protest

When the stores opened to the public, a storm of retail protest descended and the public press opened up both pro and con. The Seattle, Washington, retailers quickly agreed not to buy Ford cars or trucks,[33] and other retailers and retail organizations followed. The feeling was so strong that some even threatened wholesalers who used Ford cars and trucks. The Detroit area retailers formed the Detroit Retail Merchants' Association to fight the Ford stores and were among the first to advocate the boycott.[34]

Henry Ford was in a sensitive position. The Ford Motor Company had lost 75 percent of its automobile sales to competitors' improved models in 1926; business writers such as B. C. Forbes were daily attacking the Ford Company's lack of public relations and refusal to improve the Model T; religious writers and philosophers were

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attacking "Fordism", which, they claimed, turned men into machines; a mysterious automobile accident on March 31st hospitalized Henry Ford for a considerable period; and Henry Ford was the defendant in a million dollar libel suit which he later settled out of court. The motor truck business seemed to offer promising opportunities for recovering some of the lost automobile volume, but grocers were boycotting Ford trucks as delivery vehicles. In short, this was not the best time to antagonize a substantial segment of the business community.

Victory of the Retailers

Mr. G. N. Staples, manager of the Highland Park commissary, announced to the Detroit Retail Merchants' Association at its protest meeting on April 4, 1927, that Henry Ford would close the stores to the public. He was greeted with wild cheering and applause—the retailers had won.[35]

Mr. Staples claimed that the stores had to close, for Ford simply could not keep up with the demand. However, he argued, the real purpose in any event had been to demonstrate what effective merchandising methods could do, and to provide a practical lesson in retailing for the trade to follow.

Staples and Edsel Ford agreed to meet with a committee from the Retail Merchants' Association to show the books and to demonstrate the methods of operation.[36] A committee was appointed, and the accounting firm of Ernst and Ernst was engaged to audit the commissaries' books.[37]

The stage was set, and the merchants waited for Ford to teach them how mass retailing, combined with labor specialization, mechanized materials handling and efficient store design, could reduce the cost of distribution. The merchants suspected that the commissaries were not really profitable, that in fact many of the costs of retailing were hidden in the factory overhead charges. The charge was neither proven nor denied, for on April 21, 1927, E. G. Liebold announced that Mr. Ford would not allow the retailers to investigate his operations. He had closed the books.[38]

Disclosure

As whimsically as he had closed the record Henry Ford opened it again. Joseph E. Shafer, a young labor economist who was working for experience on the Ford production line, finally obtained permission to use the store expense records in the preparation of a detailed analysis that was published in the *Harvard Business Review* in 1928.[39] Shafer was very much impressed by what he found. The stores seemed to be charged with their fair share of total overhead expense. Rent was allocated fairly on the basis of the space occupied, considering the location and type of building in which the stores were housed. All of the direct costs appeared on the stores' operating statement. A detailed expense statement at Highland Park for the last half of 1926 was included in his article and is reproduced here as Exhibit II. Exhibit III gives further information on the Highland Park Commissary.

IMPACT

The Highland Park commissary did not have self service, but in practically all other respects it had all of the attributes of the modern supermarket. The commissary had grocery, meat,

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EXHIBIT II

OPERATING EXPENSES OF FORD COMMISSARY
HIGHLAND PARK STORE ONLY, JULY 1 TO DECEMBER 31, 1926

Sales = 100%

	Groceries and Drugs	Meat	Shoes and Dry Goods	Total
Salaries and wages (including managers, supervisors, store clerks, cashiers, doormen) and proportion of accounting, purchasing and disbursing departments	5.56%	6.61%	6.06%	5.98%
Laundry	.08	.19	none	.10
Refrigeration	.02	.05	none	.03
Store supplies	.22	.55	.05	.29
Store Tickets	.16	.17	.14	.16
Total direct selling	6.05	7.58	6.26	6.56
Administrative expenses — extra — portion of entire plant	.10	.07	.19	.10
Depreciation of office equipment	.001	.001	.003	.002—
Factory general — employment, watchmen, superintendents	.04	.03	.07	.04
Telephone and telegrams	.05—	.02	.07	.04
Central purchasing and disbursements	.12—	.12—	.09	.12
Total buying, office, management, excluding all wages and salaries	.30	.24	.41	.30
Transportation	.15	none	.22	.12
Rent, including depreciation on equipment, heat, light, ventilation, insurance on equipment and merchandise, taxes on equipment and merchandise	.28	.24	.78	.35
Maintenance of equipment	.04	.03	.09	.05
TOTAL EXPENSE	6.83	8.08	7.78	7.38

Source: Joseph E. Shafer, "The Ford Stores — A New Departure in Retailing," *Harvard Business Review*, April, 1928, p. 319.

bakery, health aids, and non-food departments, the traditional merchandise mix of the supermarket. Ample parking space was provided in the employees' parking lot and also (an unusual feature) in a covered arcade within the plant. The operating strategy emphasized rapid turnover, low prices, large unit sales per customer, minimal sales service, checkout cashiering, pre-cutting and pre-packaging of bulk goods, all of which are commonly considered as features of supermarket merchandising.

As a result of these merchandising and operating strategies, the Highland Park commissary achieved sales and efficiency figures that compare quite favorably with modern supermarket standards, *even without adjusting for the lowered value of the dollar.* In 1957, for example, average annual sales per store among the members of the Super Market Institute was only $1,810,000. Only 16 percent of the stores operated by that group did over $3 million, as compared with Highland Park's $6 million. Operating expenses

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among the Institute members averaged (median) 16.04 percent, with an interquartile range of 14.50 to 17.33. Highland Park's expense rate in 1926 was only 7.38 percent. Sales at Highland Park averaged $4.25 per square foot per week, compared with an average $3.77 (in depreciated dollars) for the 1957 Institute stores.[40] In short, three decades later, any supermarket operator would be pleased to have obtained the sales performance Ford reached in 1926.

The Supermarket

Although the commissary operation preceded the real development of the supermarket movement in this country, it seems to have had little or no influence on the subsequent development of the modern stores. So far as we know, none of the supermarket pioneers has ever attributed any part of his inspiration to the Ford stores. *The Supermarket*,[41] an authoritative history by M. M. Zimmerman, editor and publisher of *Super Market Merchandising* and founder of the Super Market Institute, does not mention the Ford commissaries.

Moreover, the supermarket industry has developed, in almost constantly increasing degree, in the self-service pattern pioneered by Clarence Saunders, rather than along the routinized service lines of the Ford stores. However, the first supermarkets used self service only in the dry grocery depart-

EXHIBIT III

HIGHLAND PARK COMMISSARY FIGURES

SALES

Year	Groceries	Meat	Dry Goods	Total
1924	$2,439,509.83	$1,446,537.48	$ 332,259.21	$4,218,306.52
1925	3,382,371.24	1,895,190.52	640,722.17	5,918,283.93
1926	3,696,809.37	2,201,403.16	1,033,858.52	6,932,071.05
1927	2,862,456.21	1,610,194.26	915,643.29	5,388,293.76
1928	2,327,057.73	1,337,263.78	884,862.63	4,549,184.14
NET REVENUE				
1924	$ 44,716.70	$ 54,354.35	$ 20,479.09	$ 119,550.14
1925	57,905.25	57,975.35	26,559.96	142,440.56
1926	144,053.99	63,991.27	54,493.60	262,538.86
1927	71,218.01	50,616.33	59,200.45	181,034.79
1928	77,943.07	40,843.75	90,810.41	209,597.23
Inventory 12/31/28	$ 172,234.98	$ 1,318.52	$ 190,991.40	$ 364,544.90
Equipment 12/31/28	27,082.59	32,440.18	23,217.79	82,740.56
Area: Square feet	16,540	5,160	9,560	31,260
Monthly rent	1,004.85	656.29	578.17	2,239.31

Source: Figures prepared by W. E. Carnegie, Accounting Department, January 10, 1929, Ford Archives.

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ments, and retained clerk service in meat, non-food, and other sections.[42] While many of the commissary techniques could have helped all phases of supermarket development, the Ford methods should have been particularly applicable to the clerk service departments.

Possible Reasons

Why did the stores have so little impact beyond the immediate resentment they aroused? Why did most of the scholars and writers pay so little attention to the commissaries, or feel that they would have little influence on the course of independent retailing? And why did merchants learn so few lessons from these interesting experiments?

In part, probably because of natural resistance to change. We talk a great deal about innovation and change in our economy, yet as a general rule most of us like to keep on doing things the same old way.

The routinized service method of retailing developed in the Ford stores probably was not as happy an inspiration as the self-service techniques that grew in the supermarkets and have now spread to drug, variety, hardware, and even department stores. Customers seem to like to shop from open displays, they seem to enjoy being able to handle and examine merchandise without interference from the salesclerks, and in general they often seem to prefer the freedom of true self service when buying convenience goods.

Finally, however, we must conclude that much of this failure in influence was due to uncertainty about the Ford operation. No one appears to have known how much of the attraction of the Ford private brands was due to the aura that surrounded Henry Ford in those days and how much was due to consumer appreciation of true value. And none of the retailers knew whether the Ford low prices were due to smart retailing or to subsidization from the Ford manufacturing operations. If Henry Ford had permitted the Detroit retailers to see the detailed cost breakdowns that Shafer later obtained, the commissary picture would have been much more convincing and the stores might have had more influence. But he didn't.

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This article is substantially an abridgement of the authors' monograph, Henry Ford: Inventor of the Supermarket? *a recent publication of the Bureau of Business and Economic Research.* *See announcement, p. 76.*

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JOHN T. DOUTT

Product Innovation in Small Business

Does the formula for survival involve the use of technical factors, or the acceptance of challenges to managerial philosophy and ingenuity?

The charge that small businessmen are using too much system and procedure, too much organization, too technical an approach to problem solving is a strange sound indeed. More commonly they are accused of being casual in adoption of "more business-like methods." Recent observations by the author suggest that businessmen do look on problems of product innovation and development as being technical in origin and solution. And their attempt to solve them has led them on occasion to activities that are both costly and fruitless. Findings indicate that small manufacturers tend to view the problem in terms of these concepts:

- Research efforts should prove rewarding in proportion to the money and personnel that are given to them.
- A useful tool for making decisions about new products is the check list. This will save time on products that "just don't fit".
- Technically trained people can be hired who will generate new product ideas and will aid in developing them.
- Management problems attendant to new products that are developed can be delegated to someone who is brought in to administrate the commercial aspects of the new product.

The Mechanical Approach

Perhaps the most amusing ideas embraced are those that hold that research is something like selling life insurance in that the more money spent and the more effort made, the more certain and the more rewarding the results will be. And, much as the life insurance man is taught to believe, all one has to do is to redouble his ef-

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forts, and his redoubled reward will be forthcoming. In a rather simple simile, doubling the amount of fertilizer applied and doubling the number of gardeners does not necessarily produce a double size bloom on the flower. The climate in which new product ideas flourish cannot be purchased by simply doubling the offering price nor can new products be expected to blossom twice as large or twice as fast by doubling the number of technically trained personnel engaged in the effort.

One of the most generally used tools in product research is the check list. Here one can ascertain at a glance whether or not a given idea fits with some preconceived notion as to what would be a "good" product for the company to develop. While the range of items on the check lists runs from freight rates to adaptability to currently owned equipment, the common theme throughout is the belief that here is a time saver and an automatic device to screen the "good" ideas from the "bad" ones. The fact that some "good" ideas (in terms of germination potential and possible adaptability) are discarded at the very outset is accepted rather casually as inevitable. At least, management had evolved a policy, an approach, a framework for dealing with the different problem of product development.

The Formula

The desirable qualities or characteristics that a new product should possess to be attractive to a small manufacturer can be summarized easily: it should serve some unique purpose in fairly wide-spread applications and should lend itself to patents or the development of a specialized market niche that will not invite or attract too much competition. The realization of this formula is almost certain to result in a product of some pulling power and with sufficiently high profit margin to make the producer happy. And the specialized market niche permits the manufacturer to schedule his manufacturing operations in a fairly serene atmosphere, the customer taking his turn at the gate and never mentioning pricing practices.

The fact that some manufacturers do find products with just these characteristics does not seem to help them in finding additional products to add to their line. Rather than regarding the experience as being unique, the finding of the proverbial needle in the haystack, the general reaction is simply to add one more criterion to the checklist — and this one well-nigh excludes any real product innovation for some time in the future. It might be better for the manufacturer to regard his finding of such a product as the grandest kind of luck and rather than spend his time looking for another needle he might do better to turn his attention to the more pedestrian products that make up the product line for most manufacturers.

CURIOSITY AND CONCERN

The fact of the matter is that finding another product with the rare combination of characteristics described above is something that cannot be assured by any mechanical approach to the problem — neither amount of effort at product innovation nor the time-honored check list. The premium quality here is an intense curiosity and concern that is centered on the prod-

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uct by individuals within the organization — individual men who are thoroughly immersed in the notion of "doing something with our product" or some new product which they have thought about largely on their own. And, as with religion, it would sometimes appear that the best way to kill it is to organize for it, delegating, assigning, parceling out until the responsibility for the product (and the zeal for it) are pretty well dismembered.

If this quality of concerned curiosity is to be developed and implemented, top management must see their own responsibility in creating the climate so essential for its advancement. As with most characteristics of the business, this one starts at the top. If the company has been living in an atmosphere of comfortable circumstances with little or no innovation in the day-to-day tasks undertaken by the management echelon, it is unlikely that one will find any wellspring of curiosity and new ideas anywhere in the company. The zest for innovation and progress is indeed a permeating and contagious sort of thing. It cannot be purchased, pigeon-holed, channeled and controlled as one would a pound of pig iron for the store room.

The Management of Improvement

Nor can one wait until such time as he needs a more imaginative approach to his product line and then proceed to instruct his people to think imaginatively, creatively. It is not a sort of current that lends itself to switch control. And bringing in an innovator or idea man to be superimposed on an uninspired organization is only to dramatize and accentuate the problem of the company's plodding pace. It will hardly solve it. The management of improvement is a continuing part of the management responsibility and the attitude or climate so essential for it to flourish in cannot be hired, delegated, or controlled by gimmick or device.

The company that is blessed with top management possessing this quality will be characterized by a questioning attitude throughout the organization — a ferment that soon involves all phases of the operation of the enterprise. Personnel earmarked by their intensity of curiosity will be hired for both sales and production, and they will get their greatest encouragement here not from the pay check but from top executives who are themselves responsive to this trait.

A second characteristic of the innovating company will be its concern with the finding of problems that need solutions. Involvement with solutions as such (an inevitable by-product of the research laboratory) or the purely commercial activity of new applications of the present line are not just a lesser order of the imaginative mind. They are more likely to be an actual distraction to it. If some unique purpose is to be served and some specialized market niche is to be found, it is more likely to result from the quest for problems to be solved than it is from the making of minor adjustments in the usefulness of our present product to its present customers. Herein lies the failure of much of that which is called "market research".

Survival of the Small

But the competition is keen, and it is here that the large company may find an edge over the small producer. With

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its reputation and larger sales force, it gains more exposure to problem situations, and when they arise, it is in a position to spend great amounts of time and money on the solving of a particular problem knowing full well that the solution could lead to a whole series of product developments. Obviously, if the small producer is to survive in such an economic arrangement, it will be by the excellent quality of what he does and not by any quantitative attempt to meet the large producer on his own playing field. His sensitivity to problem situations must be keen, his ideas unusual.

The Academic Fountainhead

It is becoming increasingly common for executives in the industrial world to turn to academic people for aid on this topic of product innovation. One case observed will be described by way of illustration. Believing that teachers in universities would be in the vanguard of new ideas and latest developments in scientific and technical areas, the chief executive of a small manufacturing concern contacted a number of university professors in a broad number of areas and arranged a loose organization whereby they would be called in as the need would arise. It was his hope that these people would become a fountainhead of new ideas, some of which might become the product with the unique characteristics described earlier.

Despite some lapse of time, the academic program has not turned up any ideas worth developing commercially. Apparently there is little correlation between intelligence and the sort of creative imagination required here. In fact, the more informed mind often turns out to be the more critical, not only of the efforts of others but of its own as well. The result is a barrenness in which creative ideas cannot take root.

AN ORGANIZATIONAL PROBLEM

The problem receiving the least attention from top management is the question of what they would do with a new product idea if they did get one and how they would integrate it into their present organization. In at least one case studied, the chief executive was actively seeking one or more new products to be added to the line, but confessed quite openly that he did not have the management team to handle the new product or the increased burdens that expanding production and sales would place on his present organization. In still another instance, the owner-manager of a fairly large operation (125 employees) admitted that he had surrounded himself with narrowly trained executives hired to do specific tasks, and that he had made no effort to weld them into a working team. Any new product developed, he observed, would mean that he would have to bring in some one to handle it. Just how it would relate to his present product line or how his new product manager would fit in with his going organization were problems that had been given but casual consideration.

In still another instance, the chief officer of the company claimed to be looking for new products, maintaining that his present plant and capital structure could easily support a sales volume three times its present size. While his manufacturing operations were quite systematically controlled, made possible by the fact that his chief

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product was free from the usual harassments of a competitive market, he relied on a constant round of visits among the executives themselves to maintain control and coordination in the higher echelons of the business. And he himself was actively engaged in reviewing inventory records of finished stock and initiating a work order for replenishment when he judged it desirable to increase quantities on hand. It is doubtful if even the slightest increase in sales volume or diversity of product line could be experienced without placing serious strains on his present administrative devices.

The New Perspective

It is apparent from these few observations that product innovation is far from the mechanical problem that it often appears to be. The priceless ingredients here are a management philosophy, an attitude, a sensitivity, a curiosity that the top executives generate and encourage and which flows from the top down through every department of the organization; it permeates every office and every function of the enterprise. In one instance this attitude was evidenced by a number of home-made machines in the shop which incorporated bicycle wheels and peculiar mechanical linkages because, as the owner explained, "nobody makes the kind of machines we need".

Until the chief executives of a company see this problem in terms of the perspectives outlined here, they will probably continue to rely on the old precepts of product development: research budget, technical personnel, and check list, complete with 5 gradations of opinion. But the race is not to the swift nor the struggle to the strong. It is to those who grasp the true nature of a problem and react with some intelligence to what it suggests.

Editor's note: for an account of an exceptionally imaginative instance of product diversification, see O. K. Burrell, "Industrial Adaptation," Business Topics, *Spring, 1959, pp. 41-49.*

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ROGER L. BOWLBY

The Significance of the National Debt

An examination of the true nature of one of the most misunderstood economic magnitudes

The United States was born with a debt arising from the Revolution and the inability of the Continental Congresses to cover the expenses of that war by taxation. One of the important issues facing Washington's first administration was whether or not the new federal government should assume the debts of the states that made up the infant republic. During this controversy there were opposing views about the significance of national debt. Broadly speaking, Hamilton favored and Jefferson opposed the debt. Hamilton's views prevailed, the federal government assumed the debt of the states, the note issues of the Continental Congresses were honored, and the national debt reached $83 million during Washington's second administration. By 1815 it had risen to $127 million. In following years the debt was virtually eliminated, and fell to a low of only $38 thousand in 1834. By 1837, it again began to assume significant proportions, and reached $61 million in 1851.

During the Civil War there was a phenomenal rise; the debt exceeded a billion dollars for the first time, and by 1866 was about $2.8 billion. For about thirty years after the war, the trend was downward, and the debt dipped briefly below a billion in 1892. It was stable at somewhat more than a billion dollars until World War I. That war saw another spectacular increase in the debt, which reached $25.5 billion in 1919. From that peak, the debt declined in every year through 1930, by which time it had fallen to $16.2 billion. Increases followed in every year through 1946. At the close of 1941, the debt was about $49 billion, and by 1946 it reached a peak of $269 billion. Since then there have been ups and downs, with rather more ups than downs. The

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debt was $289 billion as of August 31, 1960; this is only a little below the all-time high of $291 billion, which came in October, 1959.

THE DEBT CONTROVERSY

This short history of the federal debt could be matched by a history of the controversy that has accompanied it. The controversy is as old as the debt and the nation; it began with Hamilton and Jefferson and continues to the present. In current popular literature, it is possible to find the debt described as a sign of impending national bankruptcy, a generator of inflation, Lenin's favorite strategy for the destruction of capitalism, a tool of the bankers for enriching themselves at the expense of the poor, a burden on helpless children as yet unborn, and a harmless set of bookkeeping entries indicating only the distribution of money among various pockets. Clearly somebody is wrong, and it is probably true that notwithstanding our long experience with the debt, and the years of discussion and argumentation that have accompanied it, the national debt remains one of the most widely misunderstood economic magnitudes.

The purpose of this article is to separate the true and false views of the national debt so far as possible. It is not to advocate debt or to oppose it, but to attempt an evaluation of its significance. It is difficult to make the evaluation without becoming deeply involved in closely related issues, such as government spending and taxation or the need for national military strength. If these issues seem to be slighted in this discussion, it is because attention is focused on the debt itself, rather than the fiscal policies that gave rise to it or might have prevented it.

SOME SOURCES OF CONFUSION

Much of the confusion that accompanies current thinking about the national debt, and leads to erroneous conclusions about its significance, can be traced to two failings. The first of these is failure to distinguish between individual and social debt (or, what comes to the same thing, between internal and external debt). This is not to say that either the debts of individuals or the debts of governments are insignificant, for they are both important. Their significance, however, is different, and the attempt to attribute the same characteristics to government and private debt leads to serious errors.

The second failing arises when the budget and the debt are confused. Again it is obvious that both the budget and the debt are significant, but they are significant in different ways, so that it is important to distinguish between the two. Either the budget or the debt may give us troubles (at present, for example, the budget is balanced and the debt is high) but they are different sorts of troubles.

Individual Debt and Social Debt

Most of us have had some experience with debt in our own households, and appreciate its inherent hazards. We know that debt permits us to attain higher levels of living, but that its repayment involves a lowering of living levels. Debt also creates the possibility of default if it is overextended or if unforeseen circumstances impair the ability to repay. In bygone days such default was commonly punished

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by prison; today it can lead to bankruptcy proceedings. Since personal debt has these hazards, we are justified in looking at its level with certain misgivings.

There is a strong intuitive appeal for applying the same standards to public debt, but this is simply a case where our intuition is wrong. Some economists have suggested that individual debt and social debt are so different that there ought to be different words for them. Whether or not this is so, it is true that the two crucial elements of individual debt, the possibility of shifting real burdens to a future time and the possibility of bankruptcy, are absent in the case of public debt. Analogies with private household management may consequently have some significance for state and local governments or the business enterprise, but they are not appropriate for considering the significance of the internal debt of a sovereign nation.[1]

THE SHIFTING OF BURDENS

In discussing the burden of debt, it is useful to distinguish between *real* burdens and *financial* burdens. The difference is analogous to the frequently made comparison between real wages and money wages. A real burden occurs when consumption is foregone or effort expended without adequate compensation. A financial burden occurs when money payments are made and received.

It is widely believed that the national debt makes it possible to shift burdens over time, so that people now living are bearing some of the burden of the Spanish-American War and children not yet born will bear some of the burden of World War II. So far as real burdens are concerned, this is incorrect: an internal social debt, unlike an individual debt, does not involve any shifting of real burdens over time for the society as a whole.

Real Burdens: an Example

A simple example should make this clear. Let us consider a real burden that many of us now have. Many trees in my neighborhood are shedding their leaves. To rake and burn them is a real burden. I cannot avoid this burden, but private debt enables me to shift the burden to a future time. Suppose that I float a twenty-year mortgage, and use the proceeds to hire someone to do the raking. I avoid the inconvenience of leaf raking by assuming the inconvenience of a mortgage; its repayment will make it necessary for me to rake a lot of leaves (or assume some other real burden) in 1980. If I can manage a fifty-year mortgage (or perhaps a bond issue, by forming an immortal corporation) I may even be able to avoid the burden entirely by passing it on to my son (or the shareholders of the future) who will be living in 2010, although I will not.

A moment's reflection should make it clear that society cannot transfer real burdens over time by this technique. After all, if my leaves are to be raked, they must be raked by someone living in 1960. From the viewpoint of society, the burden is not avoided, it is merely transferred from one individual to another. Just as the borrowing does not really avoid a burden, the repayment does not create a real burden, for if I am inconvenienced by being forced to rake leaves

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in 1980, another member (or members) of society in 1980 will enjoy the luxury of having his leaves raked without effort on his part. From the social viewpoint the two transactions cancel out; there is no change in the aggregate of real burdens assumed by all people living in 1980.

In summary, individual debt makes it possible to avoid one real burden by assuming another at a different time, while social debt only rearranges burdens among individuals at the same point in time. It is easy to lose sight of these facts when we look at financial burdens, and not real burdens.

Financial Burdens: an Example

Now let us move to financial burdens, and take a more significant example. As an individual (and a taxpayer) I will pay some of the cost of the Spanish-American War in 1960, since part of my current income must be allocated to taxation, some of which is used to pay pensions to veterans and widows of veterans. The real costs of the war were paid in 1898, by soldiers who took time out from their normal pursuits to storm San Juan Hill and civilians who produced war material rather than civilian goods that they would have enjoyed more. But part of the financial cost is still with us. So far as society is concerned, however, the losses I and my fellow taxpayers are suffering in 1960 are offset by the gains of veterans and widows:[2] they do not impoverish the 1960 society when the entire society is considered collectively. This means that the financial burdens of 1960, while they undoubtedly exist, are quite unlike the real burdens of 1898, for they are burdens only to certain people, and not to the entire society. They involve a redistribution of income, but not a reduction in its total.

THE PROBLEM OF BANKRUPTCY

The second element of private debt is the possibility of bankruptcy. If we define bankruptcy as the inability to meet a specific financial commitment when it comes due, it is simply impossible for an internal debt to cause bankruptcy for a sovereign nation. This follows from our definitions of bankruptcy, internal debt, and sovereignty. If one has the legal authority to create the means of payment, he can fail to pay only if he mismanages things so horribly that he does not take the trouble to calculate his accounts payable, his cash on hand, and his orders for new cash. In other words, the government can pay any dollar debt by printing dollars, if it is inconvenient to collect taxes or sell more bonds. If it does not pay a debt, it must be either because it has decided not to pay (this is repudiation, not bankruptcy) or because it has mismanaged its finances.

If bankruptcy is defined in a broader sense, it becomes possible even for a sovereign state with full rights of coinage. Let us agree to call a nation bankrupt if it does not wish to repudiate a debt, but is forced to resort to printing presses to repay, and in so doing depreciates the value of its money so far as to bring about virtual repudiation. The case of Germany after World War I is perhaps the classic instance of such bankruptcy, and in more recent times some underdeveloped countries bent on rapid in-

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dustrialization have experienced a related phenomenon.

Printing Press Bankruptcy

Is this type of bankruptcy possible in the case of the American debt? While it is dangerous to call anything impossible, it seems most unlikely. In the first place, analogies with Germany during the twenties or with contemporary underdeveloped countries are not appropriate. The debt that started the printing presses in Germany was an external debt, owed to non-Germans. As such it possessed the two crucial characteristics of household debt: its repayment did in fact make Germany poorer, and default was possible. The debts of the underdeveloped countries in the postwar era are also partly external debts held by foreign nationals and governments. They are more comparable to individual debt than to internal debt such as the American debt of 1960.

In considering the likelihood that we will be unable to pay off the debt as it comes due by collecting taxes and selling bonds, the national income is probably the most reasonable indicator of our capacity to tax and borrow. The United States, during 1945, proved that it could maintain an internal debt one and one-half times the annual national income without serious currency depreciation. The present national debt is less than three-quarters of national income; if our past experience is a reliable guide, it could be doubled without resort to the printing presses. At the close of the Napoleonic Wars, Great Britain's internal debt was well over two years' worth of national income, and yet it did not impair the stability of the government or the value of the monetary unit. This would indicate that if we have a Secretary of the Treasury who is as skilled in debt management as was the British Chancellor of the Exchequer in 1818, the United States could currently maintain a national debt of a trillion dollars without inflation.[3]

Such a debt would cause difficulties, but the experience of the past indicates that it should be possible to carry the debt by taxation and refunding without bankruptcy or resort to the expedient of inflation. Such a debt would probably increase the possibility of financial difficulties arising from mismanagement, but on the other hand, mismanagement could bring about financial collapse even if the national debt did not exist.

Two Historical Cases

In this connection it is interesting to examine the two cases from American economic history that came closest to the classic model of printing press inflation. The first of these was the note issues of the Continental Congresses during the American Revolution. These became so depreciated in value that they added the phrase "not worth a Continental" to the American language as a synonym for worthless. In this case, currency depreciation did not result from a high debt, for before the government resorted to the printing presses, it had no debt. The inflation did not result because of a large debt, but because of governmental weakness, and perhaps a lack of wisdom. The Continental Congresses could not collect taxes because the thirteen colonies retained financial sovereignty; they decided to issue non-interest bearing notes, rather than

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bonds, so that no one had any incentive to hold them, and they all passed immediately into circulation, which drove up prices.

Our second experience with printing press inflation came in the Confederacy during the Civil War. Again it is true that the Confederacy had no established debt, so we can hardly blame currency depreciation on the existence of a large debt of long standing. The Confederate states mistrusted strong central government, so they created a weak government without power to tax the states. The inflation can be attributed partly to the weakness of the government and partly to unwise decisions made by government officials responsible for finance. While the Union experienced a certain amount of inflation, it was never a really serious problem, although the national debt increased to more than forty times its prewar level. In large measure, the Union avoided inflation because it increased the national debt, and the Confederacy experienced inflation because the government was partly unwilling and partly unable to incur debt.

These two American case histories indicate that printing press inflation of a destructive type is more likely to be caused by fear of debt, by avoidance of debt, or by unwillingness to assume debt rather than by the existence of debt.

THE BUDGET AND THE DEBT

As a new accounting period approaches, the fiscal authority makes two separate sets of decisions. One is on his budget: he must estimate expenditures and receipts. The other is on the debt: he must decide whether it is to be increased, reduced, or maintained. In the United States, these decisions are separated at the federal level. Congress passes one set of laws appropriating money, another set requiring taxes, and still another limiting the size of the debt. In the public mind, these separate decisions are often confused. A decision to incur a budgetary deficit is thought of as an automatic decision to increase the debt, and a projected budget surplus is equated with debt reduction. These relationships do not always hold true, for a budget surplus need not be devoted to debt retirement (it can be held as Treasury cash) and a reduction of Treasury cash or the issuance of new Treasury currency can be used to offset deficit spending without any increase in the national debt.

These are not far-fetched theoretical arguments. In eight years of the past 86 (most recently in 1916) the national debt increased while the budget held a surplus; in six years of the past 56 (most recently in 1914) the debt fell although the budget showed a deficit. In more recent years, while the direction of changes has been as expected, the magnitudes have varied substantially. During fiscal 1959, for example, a budget deficit of $12.4 billion was accompanied by a debt increase of only $8.4 billion; in 1958 a budget deficit of $2.8 billion occurred along with a debt increase of $5.8 billion. If we look at the debt, rather than the budget, we will misinterpret the role of the government in the economy during fiscal year 1959 by almost 50 percent, and during 1958 by over a hundred percent.

Nor is there a direct short-run relationship between the government's

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extravagance (or parsimony) and the size of the national debt. Our present government may be too extravagant, or too frugal, but we cannot pass judgment on this point by looking at the level of the national debt or the changes in its level since the present administration took office. We must look at the budget, at the wisdom of specific expenditures, and at our tax laws. We must consider the external threats to our military security, the role of the underdeveloped countries in the world's economic and political future, and a host of other variables. Looking at the national debt may be an easy way to make judgments, but it cannot be an accurate one.

Excessive Spending and Debt

The size of the national debt does not even give us an accurate picture of the collective extravagance or irresponsibility of all past governments. Every wasteful expenditure that has ever been made might have been financed by non-debt means (most notably money creation) and much of the existing debt (for example, the bonds held as reserves by the Social Security Administration) has not yet been utilized to finance any government spending at all, wasteful or otherwise. It is important that government spending be subjected to scrutiny in order that avoidable waste may be prevented, but an examination of the national debt makes no contribution to this scrutiny.

A further confusion between the budget and the debt sometimes arises when fiscal policy is discussed. Under some conditions, deficit spending may serve a useful social purpose in helping to cure a depression, and a budget surplus may be desirable as an inflation stopper. In neither case does the national debt influence the level of economic activity—it is the government spending that helps cure the depression and the taxation that helps check inflation. As a matter of fact, the budget deficit would produce the biggest increase in aggregate demand if it were covered by new money creation with no debt increase, and the budget surplus would be most effective in checking inflation if it were held in idle cash and not devoted to debt reduction. We can neither promote full employment by running up the national debt (although we can do so with government spending which may incidentally increase the debt) nor check inflation by reducing the debt (although we can do so with taxation, which may incidentally lessen the debt).

INFLATION AND THE DEBT

Inflation is a complicated process, and it cannot be identified with a single variable. The national debt can contribute to inflation only in a roundabout way. When resources are fully employed, a budget deficit will tend to increase the national debt, and will also tend to generate inflation. This is commonly the case during wartime. In this process, inflation and debt are the joint results of another factor; it is the deficit, and not the debt that is the causal agent. There seem to be other agents at work, too, for we have experienced inflation while the budget held a surplus (this happened in 1947 and 1948) and deflation while a substantial deficit existed (these were striking characteristics of the period from 1930 to 1933).

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At any rate, the level of the national debt cannot have much to do with inflation. It is the changes in the national debt that are significant. The deficits from 1860 to 1865 probably caused just as much inflation as the deficits from 1942 to 1945, even though the national debt was only a hundredth as high. There is no reason to believe that a high national debt will cause inflation as long as the budget is balanced.

DEBTS AND CREDITS

The discussion thus far has largely been a negative one, aimed at showing what the debt cannot do, rather than what it can do. It is not a burden to future generations (when the individuals making up the generation are considered collectively), nor is it a likely cause of government bankruptcy, an indicator of irresponsible extravagance on the part of government, or an unqualified cause of inflation. In making a positive answer, and showing the significance of the national debt, it is necessary to consider that every debt involves a credit.

This means that the people, corporations (including banks and insurance companies) and units of government in the United States now hold about $288 billion of government bonds and certificates of indebtedness, which they regard as valuable assets. If no national debt existed, all agencies now holding government bonds would have to operate quite differently. Banks and private insurance companies, for example, would have to find alternatives to government bonds promising equal security, liquidity, and rates of return or hold less desirable assets. If they could not find equally desirable assets in the same volume (and the magnitudes involved are quite large) they would be forced to suffer lower profits, or even losses, or else increase service charges and premium rates to their customers.

Reliance on the Debt

Many government agencies would also be required to make sweeping changes in their operations if no debt existed. The Social Security Administration, for example, would lose income that it currently derives from interest paid on the government bonds in its trust fund. If there were no federal debt, it would be forced to invest the fund in private securities (which is now forbidden by law, and would lead to very considerable government ownership of the means of production), lower the scale of benefits, or seek an increase in payroll tax rates or an overt government subsidy.

Fraternal and educational institutions would likewise be forced to make drastic changes in their finances, as would many units of state and local government. If the debt were reduced rapidly, the results could be chaotic, particularly so far as banks and insurance companies are concerned, but even if the change came about gradually some fundamental adjustments would be required.

In these facts we have a partial affirmative answer to the question of the national debt's significance: it has become an integral part of our whole financial structure, and permits our financial institutions to operate the way they do. Of course banks, insurance companies and the Social Security Administration could operate in the absence of a national debt, but they

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could not operate in the manner to which we have become accustomed, and the complete retirement of the national debt would produce many changes, some of them truly revolutionary and all of them hard to foresee.

THE TRANSFER PROBLEM

In the example of the Spanish-American War given earlier, it was emphasized that the financial burden of the debt involved a transfer of income, if not a reduction of total income. This transfer of income may now be considered as a problem. It constitutes another positive significance of the debt.

Interest on the federal debt is currently something like $9 billion per year, or more than the total of the debt in any year before World War I. During 1960, because we have a national debt, this sum will be taken away from some people and given to others. It is most difficult to establish the identities of these two groups. The first group, those who lose, can probably be identified with the taxpayers (especially if the budget is in balance, so that the interest payments are met by taxation, and not by further borrowing). But who pays the taxes is a difficult question in an economy where taxes are shifted and hidden. The second group, those who gain, consists of bondholders. But there are problems even here. Banks, for example, are bondholders and so must gain. But the gains are shared in uncertain proportions by bank stockholders (higher dividends) bank managers (higher salaries), and bank customers (lower service charges, higher interests on deposits, and lower interest rates on loans).

Transfers and Income Distribution

Most economists argue that the transfers of income caused by the interest payments on the national debt are regressive, which is to say that the people who lose are relatively poor and the people who gain are relatively rich, so that the transfer distributes income less equally then it would be if there were no transfers. This conclusion cannot be advanced with certainty, but there is a high probability that the national debt has this effect, and many people would find this undesirable.

Most economists would also argue that the transfer of $9 billion per year from taxpayers to bondholders tends to reduce the national product. This is because those from whom the money is taken lose a certain incentive to produce, and those to whom it is given receive no heightened incentive. As such, the interest on the national debt produces the same undesirable results as any sterile transfer of income not matched by productive services.

Should the national debt be reduced by future taxation, this reduction would also bring about transfers of income with the same general characteristics as the transfers involved in the annual interest payments: the taxpayers would lose and the bondholders would gain. If the transfers are bad, they can be eliminated only by bringing on other transfers which may be as bad as the existing ones.

DEBT MANAGEMENT AND MONETARY POLICY

Over the years, dealing in government securities has become the major instrument of monetary policy utilized by the Federal Reserve system. The

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Federal Reserve banks effect a tight money policy partly by selling government bonds, thus absorbing bank reserves and restricting the money supply, and they encourage easy money partly by buying bonds, thus giving banks higher reserves and permitting credit expansion. The banks are consequently involved in the government bond market on a continuing basis. The Treasury too is actively involved in the bond market, for it is constantly engaged in refunding operations, which amount to turning the debt over by replacing old bonds with new ones.

These two agencies have different responsibilities and objectives. The Treasury is under the executive control of the President. It seeks a stable value for government bonds in order to maintain its credit and the lowest interest rate possible to minimize the burden of the debt. The Federal Reserve is a creation of Congress with a considerable degree of legal autonomy and a long tradition of independent action. One of its goals is overall price stability.

A Source of Conflict

It is easy to imagine situations in which the operations of one agency make the task of the other more difficult, and such conflicts have occurred. The probability of conflict is greatest when the Federal Reserve enforces monetary stringency; insofar as it does so by selling government bonds, it drives their prices down, increasing interest rates and the interest burden on the taxpayer and the Treasury, and making it more difficult to sell new issues. A conflict of this sort, between the Treasury and the Federal Reserve, reached serious proportions in 1951. It was finally resolved by a gentlemen's agreement which leaves the door open for future conflict.

A different, but related, conflict, this time involving the President and Congress as well as the Federal Reserve Board, arose in recent months. After a long period of credit restriction drove interest rates to a point approaching the ceiling for long-term government bonds, the President asked Congress to raise the ceiling. Congress refused to do so. While recent money market changes have deprived this issue of its vitality, there is certainly a possibility that this difficulty may arise again.

These conflicts, past and future, point up the fact that a large national debt, requiring extensive refunding operations, creates problems that would not otherwise exist. This is not to say that they cannot be solved, but the fact that they have not yet been solved means that a large national debt, even if it is unchanging and accompanied by a balanced budget, cannot be dismissed as a matter of no significance.

CONCLUSIONS

The most common errors made in assessing the national debt consist of assigning too much importance to it, and worrying too much about its catastrophic results that are impossible or improbable. While these positions should be rejected, it is an error to dismiss the national debt as a matter of no significance because we owe it all to ourselves. The national debt has, during its 171-year history, become an integral part of our financial structure.

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For better or for worse, our institutions have adjusted to it, and any drastic changes in the debt would lead to changes in our financial institutions that we cannot fully anticipate. The debt makes necessary a continual flow of income transfers. It is quite possible that these are regressive. It is also possible that an attempt to eliminate them would do more harm than good. Finally, the national debt impedes monetary and fiscal policy, probably makes it less flexible, and engenders intragovernmental conflict.

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1. A sovereign nation, for purposes of the present discussion, may be defined as a governmental unit possessed of the power to coin money. (This power is given the federal government by our constitution.) The fifty American states have some aspects of sovereignty, but not the financial one. An internal debt is simply the debt of a sovereign nation held (as is the U. S. debt) by residents of that nation, who accept and make payments in its currency. This is true of the American debt.

2. Insofar as there are administrative costs associated with the payment of pensions, government bureaucrats who keep records, locomotive engineers who drive the trains that carry checks, bank clerks who clear checks, and others will share some of these gains with the veterans and widows. Since these people, too, are realizing their gains in 1960, and not in 1898, there is still no shift of burdens over time.

3. In 1819, as a matter of fact, British currency was effectively *deflated* by the resumption of specie payments which had been suspended during the war.

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READING FOR BUSINESS AND PLEASURE

Capital Budgeting

There are so many alternative uses to which a business may put its limited financial resources, and so many different ways to accomplish the same functional purpose, that over the years systematic methods have been developed by Joel Dean, Eugene Grant, George Terborgh, and others, for deciding which capital investments should be made by business managers.

Two young professors at Cornell University's Graduate School of Business and Public Administration have drawn together into one volume a fairly complete summary of recent ideas about evaluating internal business investment proposals.[1] The businessman who will take the time and effort to read this little book carefully can derive a good general understanding of the concepts underlying the modern approach to capital investment decisions. The engineer and controller who are concerned with the spadework in project evaluation and replacement decisions are introduced to currently used techniques.

The authors have been influenced heavily by the discounted-cash-flow techniques advocated by Joel Dean. They discuss and evaluate the older methods (pay-out, pay-off, simple rate of return) which are conceptually simple but which do not always lead to the proper investment choice. The premise underlying Dean's present-value approach to investment is sound: that one does not invest a *thing*, per se, but in the stream of future returns which that thing will provide. The measure of investment worth, then, is the value right now of that stream of expected future returns, after adjustment for the distance of those returns in time. The process of evaluating future returns is host to a variety of problems which make it complex: the timing of payments and receipts, income tax rates and the timing of tax payments via varying depreciation methods, uncertainty as to the future results of the investment, assumptions as to the value of money when you have to wait for it, and so on. The authors deal with each of these problems.

The book is not easy reading, although the authors have been careful to avoid the particularized jargon of accountants and economists. This is a chapter-a-day kind of reading, with time needed to assimilate the material before moving on. In attempting to make sure that key ideas do get absorbed by the reader, the authors sometimes seem to be redundant.

The chapter headings represent fairly the contents of each chapter. They include:

The Problem of Capital Budgeting
Illustrating the Measures of Investment Worth
Present Value versus Yield
The Meaning of Present Value
Classifying Investments
Timing of Replacements

1. Harold Bierman, Jr., and Seymour Smidt, *The Capital Budgeting Decision*, New York: The Macmillan Company, 1960. 246 pp., $6.00.

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The Use of Cash Flows in Evaluating Investments
Income Taxes and Investment Decisions
Uncertainty and the Investment Decision
The Cost of Capital
Capital Budgeting under Capital Rationing

The book ends with a chapter on forms and procedures for carrying out the mechanics of the discounted cash flow methods, a bibliography, problems and cases for practice in application of methods, and appropriate interest tables. Production quality (format, printing, editing, indexing, etc.) is excellent.

For the most part, illustrations of points made are simple and clear; in a few cases, not enough care was taken to make sure that the examples really demonstrate what is intended. The reader will get the idea but will not be able to follow through the example. Page 38, pages 40-41, page 85, page 116, for example, contain illustrations which confuse rather than clarify. In a few places, the text wording is uncertain as to meaning (page 28, 97, 98, 114). These are minor flaws in exposition, however, and do not affect the general sense to be drawn from reading the book.

The book would have been improved by inclusion of a critique of the MAPI methods of capital investment evaluation, which are hard to understand and easy to use and which too have their good and bad points. Similarly, Jones and Lamson's "avoidable costs" formula perhaps should have been examined. Finally, more attention should be given to means of compensating for uncertainty, even though this might lead us into applications of game theory. Evidently, the authors chose (perhaps wisely) to leave this topic to such books as Williams' *The Compleat Strategyst.*

Gardner M. Jones
Associate Professor,
Accounting

The First Automobile Advertisement

The editors of Business Topics, *in pursuit of their own interest in all matters of business history, stumbled upon the following in the* Journal de Paris *for January, 1791. We believe it to be by far the oldest advertisement for a motor vehicle. The previously-known three-wheeled carriage it refers to is no doubt the Cugnot Military Tractor of 1769, which was propelled by steam. (Translation ours)*

At the Hôtel de Soubise in Marais tomorrow the 23rd and a few days following you can see a car (Carrosse) that is unique of its kind and that has never been known hitherto; it is not a three-wheeled carriage such as has been seen hitherto; it is a town car (Carrosse bourgeois) with four wheels, the body decorated with four windows with hangings (soupéntes) ; it goes at the speed of a trot on either pavement or ground, without horses, and carrying five people.

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A Briton Observes Affluent Societies

One disadvantage of an affluent society is that its very affluence supports a host of critics who draw on its resources for the purpose of denouncing it. A really poor society cannot afford the luxury of denouncing itself; it is too busy being poor.

Against all this I beg to report progress. For the first time, I won't say in all history but in modern recorded history, the burden of animal toil has been lifted from whole nations. If this be affluence, may it spread. Unremitting and painful toil has been the lot of the bulk of mankind through the ages, and is still the lot of much of humanity.

Is it not a cause for satisfaction that in America, this country and, alas, too few other countries, one is not afflicted by the sight of men and women, even children, laboring to the limits of physical endurance? Affluence has brought it about that in the advanced countries man does not earn his bread in the sweat of his face. Call it a gadget civilization if you like, but the women aren't turned into hags before 40. It is indigence not affluence that harnesses a woman to a plough.

I can say with all respect and reverence that man does not live by bread alone, but it makes a very good foundation.

So in the knowledge of the changes that have occurred in my lifetime I can view with composure, even satisfaction, some of the manifestations that upset the critics of our Western society.

George Schwartz, in *The Sunday Times* (London), February 28, 1960. Abridged, and reprinted by permission of the editors.

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Our Contributors

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Ambassador Braj Kumar Nehru, India's Commissioner General for Economic Affairs, was educated at his home university in Allahabad, at the London School of Economics, Balliol College, Oxford, and at the Inner Temple. Described variously as chief negotiator for economic aid to India and his country's roving economic ambassador, Mr. Nehru started his official career upon joining the Indian Civil Service in 1934 as the Assistant Commissioner in the undivided Punjab. In 1939 he was posted at the Union Government's Headquarters as Under Secretary to the Department of Education, Health and Lands. Thereafter he joined the Department of Finance, and after serving the Ministry in different capacities was appointed Secretary to the Government of India, Department of Economic Affairs, in 1957. Earlier, from 1949 to 1954, he was stationed in Washington as Executive Director, International Bank for Reconstruction and Development. He also served as Minister, Embassy of India.

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